

Rock Products

DEVOTED TO THE PRODUCTION
OF ROCK AND ITS PRODUCTS

Vol. VI. No. 8.

LOUISVILLE, KY., MARCH 22, 1907.

MANUFACTURED PRODUCTS
AND CONCRETE EDITION

Stucco ! Wall Plasters ! Stucco !

The American Gypsum Company's Ad On Page 81.

UNION MINING COMPANY,

Manufacturers of the Celebrated



DEVOTE a special department to the manufacture of Brick particularly adapted both physically and chemically to

Lime Kiln and
Cement Kiln
Construction

Large stock carried. Prompt shipments made. Write for quotations on Standard and Special shapes, to

UNION MINING CO.,
Mount Savage, Md.
CAPACITY, 60,000 PER DAY.
ESTABLISHED, 1841.

Northwestern Clay Mfg. Co.

New Windsor, Illinois.

J. O. FREEMAN, Genl. Mgr.
Sewer Pipe
Drain Tile.

An inquiry will be answered.

Works: Griffin, Ill.

Ottawa Silica Co.'s Washed White Flint Sand

Is used for sawing stone in more than a dozen states. Cuts more and lasts longer than any other sand on the market. Unexcelled for Roofing, Facing Cement Blocks, White Plaster, etc. Freight rates and prices on application.

OTTAWA SILICA CO. . . Ottawa, Ill.

DEXTER Portland Cement

THE NEW STANDARD

Sole Agents SAMUEL H. FRENCH & CO. Philadelphia



Phoenix Portland Cement UNEXCELSSED FOR ALL USES.

Manufactured by
PHOENIX CEMENT CO. NAZARETH, PA.

Sole Selling Agent WM. G. HARTRANFT CEMENT CO.,
Real Estate Trust Building PHILADELPHIA, PENNSYLVANIA

FOR GRIFFIN MILLS
FOR TUBE MILLS
FOR BALL MILLS

"RELIANCE" BELT ABSOLUTELY BEST

**Chicago Belting Company
MAKERS**

67-69 South Canal Street,

SEND US YOUR SPECIFICATIONS.

CHICAGO, ILL.

**ALMA
Portland Cement**

STANDARD BRAND
OF
MIDDLE WEST.

Specially Adapted to all Reinforced Concrete and High-Class Work.

Alma Cement Co.,
WELLSTON, OHIO

Binns Stucco Retarder Co.

UHRICHSVILLE, OHIO

The largest manufacturer of retarder in the world.
Write us for prices.

BAGS FOR LIME AND CEMENT

We have recently purchased the factory of the Toledo Paper Bag Co. and have tripled the capacity, and are now in position to make prompt shipment of all orders with the best quality of paper.
Prices quoted and samples mailed on receipt of inquiry.

The Urschel-Bates Valve Bag Co. Toledo, Ohio

**Improved Shield
Cement**

The Best Natural Cement
With 3 parts sand—425 lbs. 1 year.
Economical for Concrete.

**LAWRENCE CEMENT CO.
OF PENNA.**

SIEGFRIED, PA. PAMPHLET FREE.



MARQUETTE PORTLAND CEMENT

Gives Absolute Satisfaction for All Kinds of Concrete Work.

MARQUETTE CEMENT MANUFACTURING CO.,

SALES DEPARTMENT: MARQUETTE BLDG., CHICAGO.

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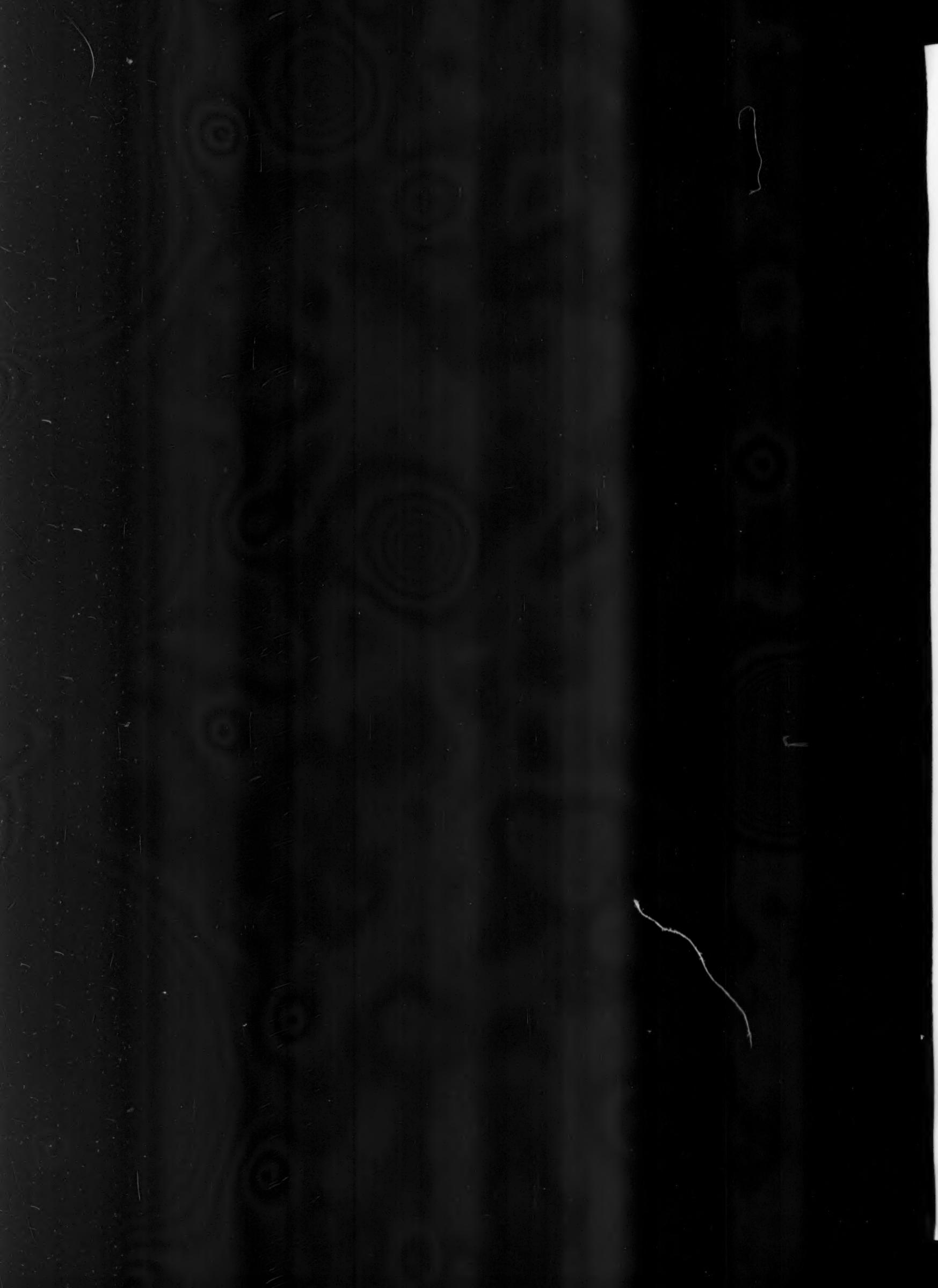
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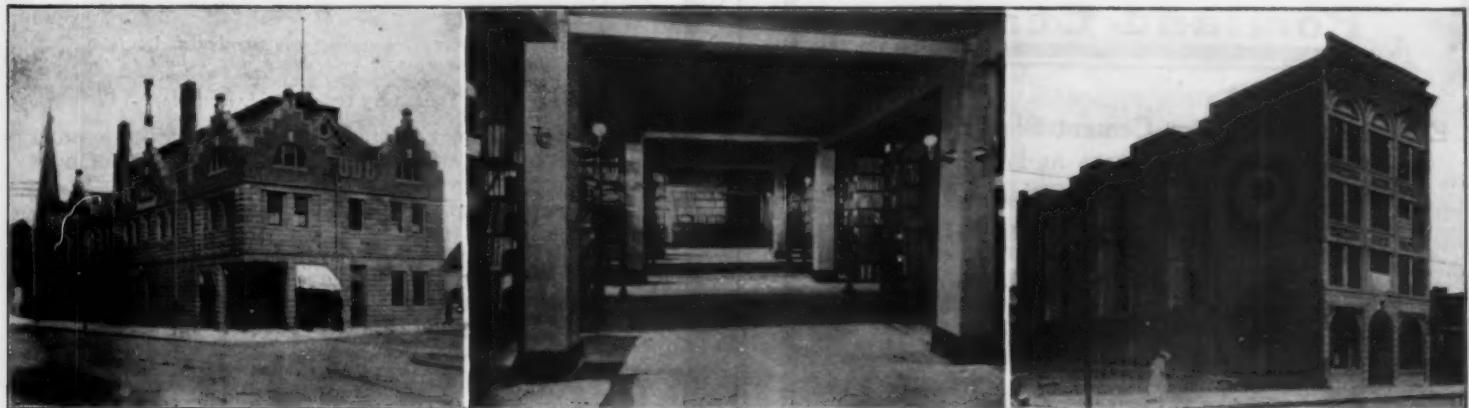
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LOUISVILLE, KY., MARCH 22, 1907.

MANUFACTURED PRODUCTS
AND CONCRETE EDITION



CONCRETE IN CLEVELAND: STORE AND APARTMENT BUILDING, CONCRETE FOUNDATIONS, CONCRETE BLOCKS MADE BY CLEVELAND CEMENT BLOCK CO.; CONCRETE STACK ROOM FOR CLEVELAND MEDICAL LIBRARY; HOTEL USONA, CONCRETE CONSTRUCTION, ERECTED UNDER SUPERVISION OF ARCHITECT MATTHEW T. SHAFFER.

HIGH-CLASS CONCRETE WORK IN CLEVELAND.

CLEVELAND takes a back seat with no community in America in the use of concrete and cement construction. Aggressive in business and manufacturing, merchants, manufacturers and contractors were not slow to realize the advantages of concrete in building. Despite the fact that Cleveland is in the heart of a vast stone district and that the city is well supplied with brick plants, scores of buildings are being erected of concrete. These structures are not small and insignificant but large and pretentious and a credit to the city's architecture. Fully a score of large "all concrete" buildings have sprung up within a year. Several concerns are engaged in the erection of concrete buildings exclusively in Cleveland and they are meeting with unqualified success. Some little difficulty was experienced in this as in other cities in convincing the public that concrete buildings were all that was claimed for them but that stage seems to have passed and confidence is now established in the value and utility of cement construction. Concrete has come to Cleveland to stay. Its adaptability to every form of construction, the ease with which it can be adapted to ornamental purposes and its comparative cheapness are the advantages which the advocates of concrete claim for it and every claim seems to have been substantiated in Cleveland. Not only have crudely constructed factory buildings proved satisfactory, but in the realm of attractive architecture this city can boast of some specimens which can scarcely be surpassed anywhere.

Municipally, Cleveland excels in concrete work. It is used in all of the city departments, and its utility is spoken for by all public officials having construction work in hand. Probably the largest amount is in the form of beds for pavements. Cleveland paved twenty-five miles of streets during the past year and employed thousands of tons of con-

crete. There has also been a healthy showing in the use of concrete for cement walks. The city is employed at present in helping the railroads eliminate dozens of dangerous grade crossings and hundreds of thousands of dollars are being put into construction work, a large part of which is based on the intelligent use of concrete. Its cheapness and elasticity have made it a greater favorite than stone and brick. Park bridges and culverts have been built

extensively of concrete and cement, and some beautiful specimens of artistic cement bridges are to be found in Cleveland parks.

Although there are several architects who have made a study of the question of concrete construction, Matthew T. Shaffer is perhaps as well qualified as any to speak with authority for he has but recently finished the construction of an all-concrete apartment hotel on Euclid Avenue, which is a credit to both Mr. Shaffer and the city. This structure was erected under the Ransom system and, when tested by the city authorities at Mr. Shaffer's request, sustained enormous loads not expected of it.

"What do you think of the advantages of reinforced concrete construction?" Mr. Shaffer was asked by the correspondent of *ROCK PRODUCTS*.

"Concrete steel or reinforced concrete construction has ceased to be a matter of theory," replied Mr. Shaffer. "It has come to stay and has been proven to be the best and the most economical construction for high class buildings. Like every other kind of new work, however, we have been troubled with adventurers, and the chief reason for so many accidents which cause loss of time and sometimes loss of life is that people, who do not know the first principles, conclude that it is easy to make mud and plunge into work which requires skilled engineering ability and experience of long standing. I have had men, who have laid cement sidewalks, request me to allow them to bid on reinforced concrete buildings. On one occasion I had one concern which lays cement floors ask to bid on a building at so much per square yard. They do not realize that ninety per cent of the strength of concrete building is due to the use of steel rods in such a manner as to procure the greatest strength. Many contractors who realize that steel must be used in the amounts as shown do not realize, however, that this steel must be placed exactly as depicted in the drawings. Among most contractors I find this the point in which they are usually careless. Many contractors do not comprehend, either, that the centering must be strong

(Continued on Page 45)



M. T. SHAFFER, ARCHITECT, OF CLEVELAND.

ROCK PRODUCTS.



Strength Durability Permanence

Not only laboratory tests, but results in actual work prove the high grade quality of

Northampton Portland Cement

Especially adapted for Cement Blocks, Sidewalks, and all forms of concrete and re-inforced concrete construction.

Northampton Portland Cement Co.

No. 1 Madison Ave., NEW YORK.

Works at Stockertown, Pa.

Use Louisville Hydraulic Cement for Foundations

and invest the amount saved thereby otherwise. Concrete made of Louisville Cement is strong enough for foundations of all kinds, and by the use of it a great saving is effected. The following letter from a well-known firm of Chicago architects, written when Louisville Cement was not ground so fine as it is to-day, shows its good quality and suitability for foundations:

CHICAGO, ILL., Sept. 29, 1898.

Mr. A. L. Kanagy, care of Western Cement Co., Louisville.
Dear Sir:—In reply to your question concerning the concrete foundations of power house of the South Side Elevated Ry. Co., at 40th and State Sts., Chicago, which foundations were made of Louisville Cement, we beg to say that the foundations have turned out to be perfectly satisfactory, and behaved all the time as we expected they would.

The controversy which arose at one time concerning this was caused by no fault of the concrete or of the cement.

It is true that one of the engines was wrecked and twisted off the foundation bolts without doing any injury to the foundation.

Yours very truly, D. H. BURNHAM & CO.

Louisville Cement mortar made in the proportion of 1 cement to 2 sand, will develop a tensile strength of over 100 pounds per inch in seven days, and will withstand a crushing strength of over 1,000 pounds per inch in twenty-eight days.

Louisville Cement in bags of 4.77 cubic feet per barrel, costs less than 50c per barrel at the mills. At this price a simple calculation will show the economy of its use. Write for pamphlets and test sheets.

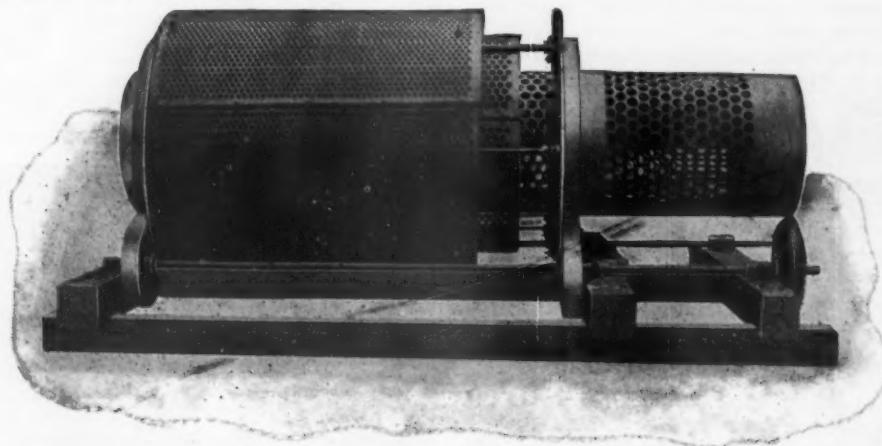
WESTERN CEMENT CO.

INCORPORATED
281 West Main Street,

Louisville, Kentucky

The O'Laughlin Revolving Screen

For Granite, Stone, Sand, Gravel, Coal, Coke or anything requiring separation.



screen surface which is equal to 3 screens of the old pattern, 14 feet long and 36 inches in diameter.

We claim it requires but one-fifth the power to operate our screen than the old style and yet it does the same amount of work. This is proven first, by the length of screen; second, by the size of driving pinion in comparison with gear; third, by the size of trunnions in comparison to the tread of screen. The material to be sep-

arated and weight of screen rests above the bearing points. While in the old style screen it is below the center of bearing points. The material being immediately separated by dropping into each of the concentric screens reducing the wear on screens to the minimum.

Let us know your requirements, what materials you wish separated, the amount daily and the different sizes, and we will furnish an estimate as to cost, power required, etc.

THE principle of separating is exactly opposite that of the older style revolving screen, the materials being discharged on coarse perforations first.

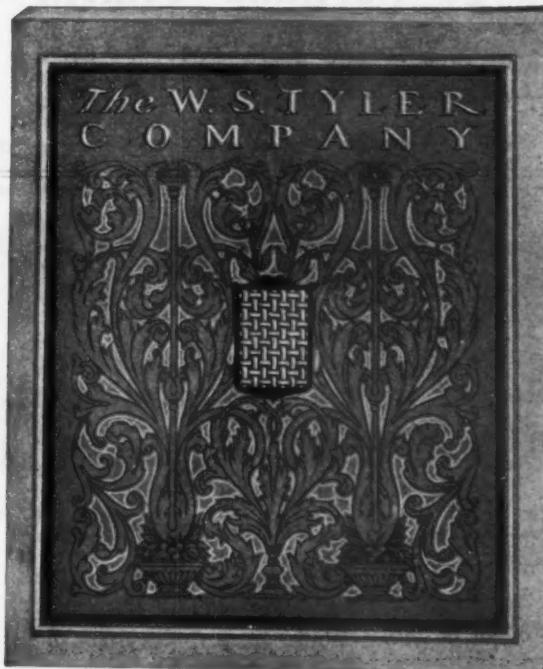
The coarse material is immediately separated from the finer in each of the concentric screens to the different required sizes.

The type of screen here illustrated is in use at a No. 8 Crushing plant for limestone (which was formerly equipped with three of the older style screens and required an outlay of \$350.00 for each 100,000 cu. yds. of stone separated). Up to the present time it has made perfect separation into five sizes of 300,000 cu. yds. with a recent outlay of \$27.00 for renewing the portion of the screen that the stone has been discharged on, and should do as much more without any additional outlay.

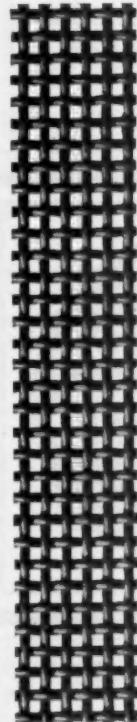
The inside or longest screen is 8 feet long and 36 inches in diameter, the next concentric screen is 7 feet 6 inches long and 48 inches in diameter, the next screen is 7 feet long and 58 inches in diameter, the next is 6 feet 6 inches long and 66 inches in diameter. With the exception of the inner screen each section is adjustable and the screen is complete without it. The figures given above give 492 sq. ft. of

JOHN O'LAUGHLIN, - - - RACINE, WIS.

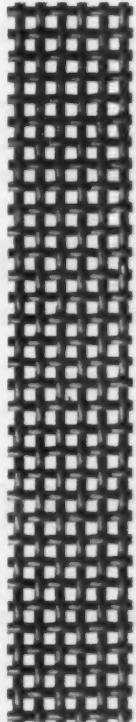
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We want you to know why "Tyler" Double Crimped Screens have such extraordinary long life; why the meshes are all uniform and accurate even when the wires are almost worn away and why we can guarantee to reduce your screen expenditure. This is all made clear in our interesting book on "Screens," which is also complete in technical information. Put your name and address on the coupon below and mail it to us.



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Manufacturers of Wire Cloth from 4-inch Mesh to 200 Mesh.

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TEAR OFF HERE.

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Please send free of all expense your new book on "Screens."

Mark for Mr. _____

Name of Company _____

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EDISON

Portland Cement Co.



85 per cent. thru 200
98 per cent. thru 100

The Finest Ground Portland Cement Manufactured

"Neat tests are of less value than those of the briquettes made with sand and cement. The fineness of the cement is important, for the finer it is the more sand can be used with it."

[Abstract from "Specifications for Portland Cement," issued by the United States Navy Department, June 12, 1905.]

FINE GRINDING OF PORTLAND CEMENT AND WHAT IT MEANS

For a proper understanding and full appreciation of the importance of fine grinding, it is necessary to explain that Portland Cement (as manufactured in the Lehigh Valley) is made from what is commonly understood as "Cement Rock," with the addition of sufficient limestone to give the necessary amount of lime. The rock is broken down and then ground to a fineness of 80 per cent to 90 per cent through a 200 mesh screen. This ground material passes through kilns and comes out in clinker. This is ground and that part of this finely ground clinker that will pass a 200 mesh screen is cement; the residue is still clinker. These coarse particles or clinkers will absorb water very slowly, are practically inert, and have very feeble cementing properties. The residue on a 100 mesh screen is useless.

Edison Portland Cement is ground 85 per cent through a 200 mesh screen,—10 per cent finer than other brands. This can be verified in any laboratory.

In a barrel of Edison Portland Cement, therefore, you get 85 per cent of Portland Cement and 15 per cent of clinker. In a barrel of other brands you get 75 per cent of cement and 25 per cent of clinker.

If you are buying a ton of coal, would you buy the coal containing 25 per cent of slate, or would you prefer the coal containing but 15 per cent of slate?

If, instead, you are buying iron ore, would you not give preference to ore that contained 10 per cent more units of iron?

Another point is worth considering and that is that the Edison Portland Cement Company make but one brand or quality, and that is the best.

SALES OFFICES:

Real Estate Trust Bldg., Philadelphia. St. James Bldg., New York.
Machesney Bldg., Pittsburgh. Union Bldg., Newark, N. J.

Reputation Unrivalled

ONE BRAND ONLY
Sound, Strong, Uniform



ONE OF THE OLDEST AND THE BEST.

Vulcanite Portland Cement Co.

Flatiron Bldg., New York. Land Title Bldg., Philadelphia.

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Sales Office: Michigan Trust Building,
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Improved Utica Hydraulic Cement

The finest ground and highest grade Natural Cement manufactured in the U. S. Every car tested by Robt. W. Hunt & Co., and their test furnished on every car shipped.

MEACHAM & WRIGHT CO. Sole Agents, Chicago.

BANNER CEMENT CO., MAKERS OF THE FAMOUS BANNER BRAND OF **LOUISVILLE CEMENT.**

Guaranteed that 90 per cent. will pass a
ten thousand Mesh Sieve.

WE SELL TO DEALERS ONLY.

GENERAL OFFICE: MASONIC TEMPLE, CHICAGO, ILL.

"Egyptian Portland Cement" FOR CEMENT BLOCKS

"DEHYDRATINE" TO MAKE THEM DAMP. AND WATERPROOF

Is a combination worthy of the attention of every cement worker.
Both distributed by

J. E. BARTLETT CO. : : : : Jackson, Mich.



Pennsylvania Portland

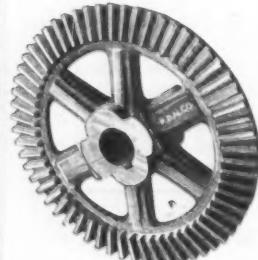
UNEQUALLED FOR HIGH
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No Matter What



your gear specifications
we can meet them
promptly. Frequently
we have just the pat-
terns in stock, and charge
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MANUFACTURERS OF AND DEALERS IN

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Economy Dictates

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"Taylor-Made" MANGANESE STEEL "Taylor-Made"



The actual ratio of wear in "Taylor-Made" plates, as compared with other castings, has been proved by large users in hundreds of cases to warrant their use.

"THE REASON'S IN THE STEEL."

We shall be pleased to give you further information.

Taylor Iron & Steel Co.

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AUTOMATIC ELEVATORS

The greatest invention of the day, will load sand and gravel both run of bank or screened for less money per yard than any device on the market.

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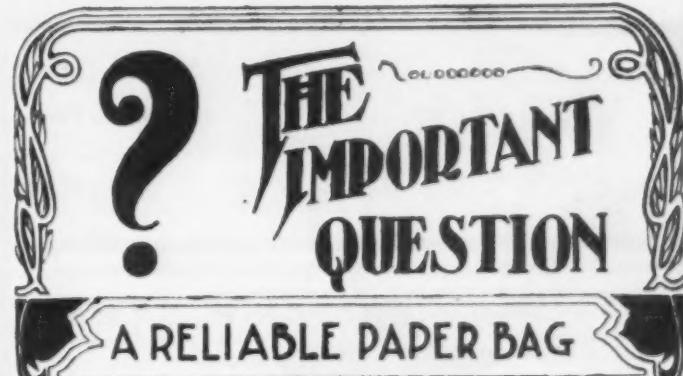
SHOEMAKER & CASPARIS,

R. L. SHOEMAKER, MGR.,

NEWCOMERSTOWN, OHIO.



Tell 'em you saw it in ROCK PRODUCTS

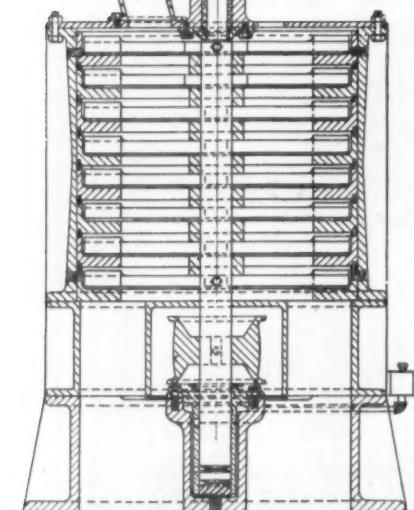


THAT will stand severe handling, and arrive at destination without damaged contents, has been the one desire of the cement and hydrated lime manufacturer. We have solved the problem and can convince you with the first order.

The West Jersey Paper Mfg. Co.
Front and Elm Streets

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This mill will take in pieces as large as a man's fist and can be regulated to

grind the same to granulations or to a powder.

It is certainly the best "ALL-AROUND" mill in the market.

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COMPLETE BEAVER COUNTY, PA. INDUSTRIAL
TRADE MARK.

Railway Equipments

For the Clay Worker, Brickmaker, Cement Worker, Mines and Quarries.

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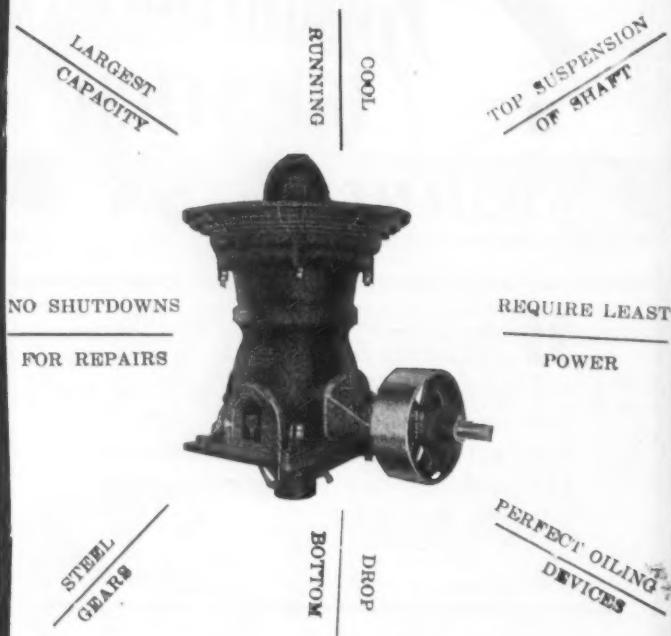
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LION FUZES

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BLASTING MACHINES

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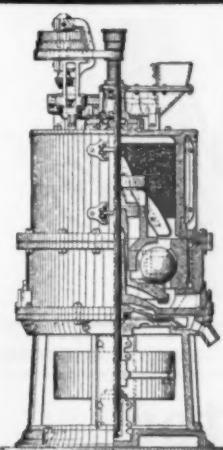


No. 1, Capacity, 8 Holes
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Which tells all about this method. If you are already using fuses, you should have the book anyhow, as it contains many valuable hints. Sent free.

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Fuller-Lehigh Pulverizer Mill The Best Pulverizing Mill Manufactured

Exhaustive tests in all departments, in competition with the most approved grinding machines in use, have demonstrated the superiority of our machine

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"With the four we are now ordering we will have in use 16 Fuller Mills in all, and I think you can hope to get orders from us within the very near future for quite as many more."

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Few extracts from letters received from users:

"We have to say for your Fuller Mill that it is unqualifiedly the best grinding device we have ever tried on our lime rock and eminently satisfactory to us."

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If interested, write us for further information.

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Ingersoll-Rand Corliss Compressors combine the exclusive superiorities of former Ingersoll-Sergeant and Rand types, more of which are in use today than all of other makes combined. The Ingersoll-Rand Company guarantees its Corliss Air and Gas Compressors to deliver compressed air or gas with a lower steam consumption per cubic foot, and to maintain a higher economy over longer periods of actual operation under working conditions, than any other Corliss Compressor made.

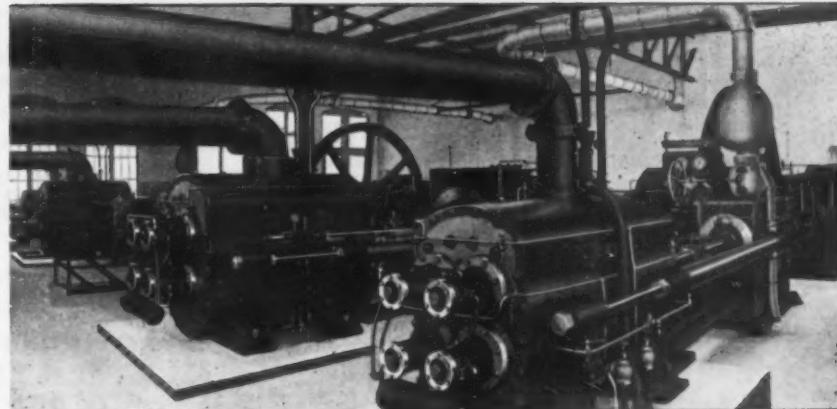
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P27

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For Cement Works, Lime Kilns, Cupolas, Steel and Iron Works of every description :: :: :: ::

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HENRY S. SPACKMAN ENGINEERING CO.

Official Chemists, National Association of Manufacturers of Sand Lime Brick.

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Lime and Sand-Lime-Brick plants designed, constructed and superintended. Established plants examined and improved. Properties investigated and Physical and Chemical reports made. Chemical and Physical reports of all building material a specialty.

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Hand Made — Hard Burnt
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— are the best for —
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PRINTERS, PUBLISHERS, BINDERS

430-432 W. Main St.

LOUISVILLE, KY.

Take Time by the Forelock

Get a Kritzer Continuous Hydrator

If you want to do a rousing lime business in the spring, you've got to begin to get ready for it NOW. Get your plant up and get busy hydrating. Let the people know you mean business, and that you've got the stuff to sell. Spread the news all about you everywhere. Let the builders and everybody who uses lime know how much better hydrated lime is than the old-fashioned kind. Show them how much more convenient hydrated lime is to handle, how much easier it is to work and how much more economical it is. Do you know that plaster and mortar from hydrated lime gains increasing strength with age? Well, it does. The older it gets, the stronger it is.

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We are makers of machinery for hydrating lime. We will furnish you anything from a sprocket wheel to a complete plant, and guarantee whatever you get from us to be the best of its kind in the country. We have the most up-to-date and successful method. Our machinery is tried and tested, and we've had more real experience in this business than all our competitors put together. That's a broad statement, eh? Well, We Can Prove It.

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Ask For Our Little Book.

*The Kritzer Company,
Western Ave & 17th St.,
Chicago, Ill.*

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Why are the Palmer Lime & Cement Co.'s Limes in demand?
Why are they used in all principal buildings in New York,
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For finishing, because they will not pit, will not follow the
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For brick and stone, because they are strong, large yielders, and
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We are Sole Distributors of the—

Cheshire finishing lime, which is well known and always A 1.
Bellefonte Lime, a highly caustic chemical lime, and a large yielder
for brick work, making a bond almost equal to cement mortar.

Palmer select finishing, fully guaranteed.

Palmer No. 1 common, high grade for brown and scratch coats.

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We succeed in pleasing our customers.

The Palmer Lime & Cement Co.

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Tel. 6610, 6611, 6612 Cortlandt.

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25 Tons Put Thro Since January 1.



**This is the Mill
that (Clyde)
built.**

expressly
to hydrate
samples of your
lime, so as to dem-
onstrate what we can
do with it.

¶ Possibly you can't arrange to visit our plant in person, but anyway ship us, say 10 barrels or so of your lime, so we can show you just what kind of hydrate it will make. We will return as much of the finished product as you want. Then have your mechanics try it for working qualities. It will cost you nothing but — the freight.

¶ As shipments are continually arriving, we would urge you to get yours on its way, so it can get back to you before building time.

¶ Our plant is open at all times to interested parties. Come, or send your lime, or both.

Write us—"We like to answer questions."

CLYDE IRON WORKS
DULUTH, MINN.

Mattocks

N. B.—Pack shipments in good barrels lined with heavy paper and thus avoid air-slacking. Shipments so packed have always arrived in good condition for hydrating test. Tests made to date for concerns as far East as New York and as far West as Washington.

OUR HIGH GRADE PRODUCTS



Largest Capacity of Hydrated Lime in the United States.



Woodville White Lime Company,

**Big
B**



Lime.

BIG B LIME

ITS HISTORY IS A STORY OF SUCCESS.

The Building Trades' Barometer. The Iron and Steel industry promises increased activity. It is predicted that a new tonnage record in that business will be established.

This means a large demand for LIME, and transportation facilities taxed. Isn't it wise to arrange early for your supply of LIME?

BIG B's quality is unsurpassed. That means satisfied and contented contractors for you. Our quick shipping facilities mean fresh lime on short notice.

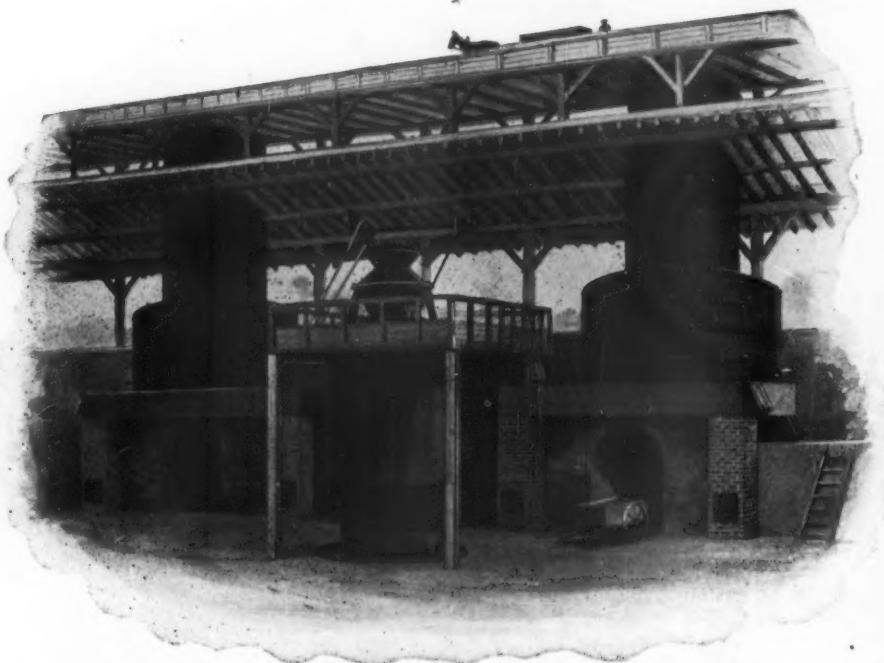
A POSTAL CARD WILL BRING OUR 1905 MEMORANDUM BOOK.

**THE NORRIS AND CHRISTIAN STONE AND LIME CO.
MARION, OHIO.**

Tell 'em you saw it in ROCK PRODUCTS.

Gas Producer Plant of the New England Lime Co., Canaan, Connecticut.

PRODUCER GAS
Makes the Best Lime
It increases the
Capacity of a Plant
and Reduces the
Fuel Bill



The Total Cost of
This Installation
Will be Paid for by
the Saving Effected
During the First
Year of Operation

"We have equipped two plants for above company and are now equipping a third."

MORGAN CONSTRUCTION CO., Gas Producer Dept., Worcester, Mass.

CEMENT-KILNS Lined with Our BAUXITE Lining Blocks

In hot zone and our special fire-clay blocks throughout the rest of Kiln can be run from three to four times as long as Kilns lined with the very best fire-clay linings. Write for booklet describing Bauxite Linings for Portland Cement Rotary Kilns.

Fire-Brick for Lime Kilns

We number among our customers many of the large Lime and Gypsum Manufacturers of the Country.

Sewer Pipe, Wall Coping, Hollow Tile
Fire Proofing, Flue Lining.

Laclede Fire-Brick Manufacturing Co.
ST. LOUIS, MO.

The Hoosac Valley Lime & Marble Co.

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Manufacturers of

.... High-Grade Finishing Lime....

Noted For Its Quick and Even Slacking.

Now in Use in Some of the Largest Buildings Being Erected in New York City.

THOS. D. CONNORS, President.

Telephone
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New York Office: 1123 Broadway.

The Ohio and Western Lime Company,

WORKS AT
Fostoria, Ohio.
Gibsonburg, Ohio.
Sugar Ridge, Ohio.
Tiffin, Ohio.
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Geneva, Ohio.
Limestone, Ohio.
Lime City, Ohio.
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MANUFACTURERS OF AND WHOLESALE DEALERS IN

Ohio White Finishing Lime, Ground
Lime, Lump Lime, Fertilizer, Hydrate
Lime, Cement, Plaster, Hair, &c., &c.

Capacity
8000 Barrels
Per Day.

Offices: TOLEDO, O. 209-210-211 Chamber Commerce Bldg.

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L I M E

WE MAKE IT.”

Lump - Barreled - Hydrated - Ground.

STRONGEST IN OHIO.

We are not connected with any Trust or Combination.

WRITE US
PHONE US

The Scioto Lime and Stone Company, Delaware, Ohio

DOES NOT DETERIORATE WITH AGE.



Excelsior Hydrated Lime

A PRODUCT OF MERIT.

The best prepared Lime in the market. Is superior to hot Lime for all purposes. Will not deteriorate. Absolutely pure and free from foreign ingredients. Successfully used for more than two years by the largest users of Hydrate in the country.

SEND FOR PRICES.
MADE ONLY BY

The Cleveland Builders Supply Co. Cleveland, O.

Try us on your Portland Cement requirements

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The Kelley Island Lime and Transport Co.

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Tiger Brand White Rock Finish the best known and smoothest working Hydrated Lime manufactured.

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THE LARGEST LIME MANUFACTURERS IN THE WORLD.

A. & C. Stone & Lime Co.

MANUFACTURERS OF

CHOICE PORTLAND WHITE LIME

Crushed Stone—All Sizes.

TOTAL CAPACITY CRUSHED STONE 4000 TONS DAILY.

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General Office: 17 N. Penn. Street
INDIANAPOLIS

The Strongest White Lime

ON THE MARKET

Uniform Quality

Finest Grain

The American Clay Machinery Co.
WILLOUGHBY, OHIO

May 16, 1906.

The Mitchell Lime Co.
Mitchell, Ind.

Dear Sirs:

Replies further to your favor of the 8th inst requesting you to advise you the result of practical test of your lime in the manufacture of sand-lime brick. We are pleased to advise you that the lime hydrated easily and the brick made from it were first-class in every respect.

We have forwarded some samples of it to Mr. Elkus of the Indianapolis Composite Brick Co. and he can probably advise you further.

Very truly yours,
The American Clay Machinery Co.
by W. J. Burke.

MITCHELL LIME COMPANY
MITCHELL, INDIANA

FOWLER & PAY,

Brown Hydraulic Lime, Austin Hydraulic Cement, Jasper Wall Plaster, Brick, Stone.

CEMENT WORKS: Austin, Minn.
PLASTER MILL: Ft. Dodge, Iowa.
WAREHOUSE: Minnesota Transfer.

MANKATO, MINN.



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WHITE LIME ASSOCIATION
MANUFACTURERS OF
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White Lime.
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WESTERN LIME CO.

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LUMP LIME
ALSO, DIAMOND BRAND SUPERIOR WHITE FINISH
A HYDRATED LIME

AND A GROUND AND FERTILIZER LIME

Capacity 4,000 barrels or 10,000 bushels per day. Capacity of Hydrated Lime, 120 tons per day. Our LUMP LIME as well as our HYDRATED LIME is the very best obtainable for all purposes for which a good lime is needed in erecting buildings. Our HYDRATED LIME is absolutely the best finishing lime on the market.

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Farnam "Cheshire" Lime Co.

OF CHESHIRE, MASS.
MANUFACTURERS OF THE

Celebrated "Cheshire" Finishing Lime.

Well known throughout New York and the Eastern States as the finest finishing lime manufactured. The special feature of this lime is its quick and even slacking, thus preventing any cracking or checking when put on the wall. It is the best lime used in the country today for all.

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DESIGNERS AND BUILDERS OF
Lime Kilns and Complete Lime Plants

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KOMINUTERS for granulating
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Davidson Tubemill especially
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Silex Linings for Tubemills
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NEW YORK

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MASONS' SUPPLY DEPOT.

Manufacturers of, and Wholesale Dealers in

Snow Flake Lime, Cement Building Blocks, Alpha Portland Cement, Hoffman Rosendale Cement, Cummings Akron Cement, Kings Windsor Wall Plaster, Kings Plaster Paris, Fire Brick, Fire Clay, Dynamite, Caps, Exploders, etc.

OZARK COOPERAGE & LUMBER CO.

MANUFACTURERS OF

Lime, Cement and Salt Cooperage Stock.

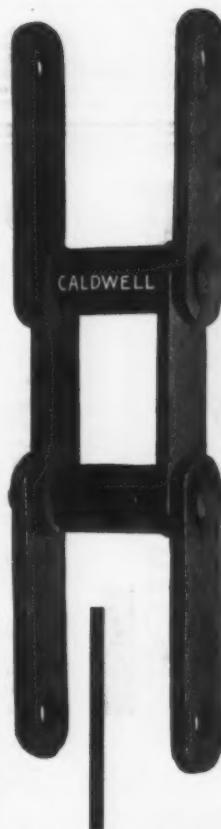
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We manufacture machinery for transmitting power, and for elevating and conveying materials in and about cement plants, rock-crushing plants, lime plants, mortar works, plaster works, and other industries.

We manufacture screw conveyors, belt conveyors, and all sorts of chain and cable conveyors, for handling rock, lime, sand, etc.

We manufacture elevators, also, for handling the same kinds of material.

Our lines include shafting, couplings, bearings, collars, pulleys, gears, rope sheaves, sprocket wheels, elevator buckets and bolts, steel elevator casings, etc.

We have our own foundry, sheet metal department and machine shop. We employ first-class help in all departments and use high-grade materials.

When you are in need of anything in our line, try us.

Catalogue No. 28.

H. W. Caldwell & Son Co.

17th St. and Western Ave., Chicago

95 Liberty St., New York City
Woodward, Wight & Co., Ltd., New Orleans, La.

STURTEVANT GRINDING MILLS

SIX KINDS

FOR

Hard, Soft or Medium Rock.
Produce a finished product
without screens.



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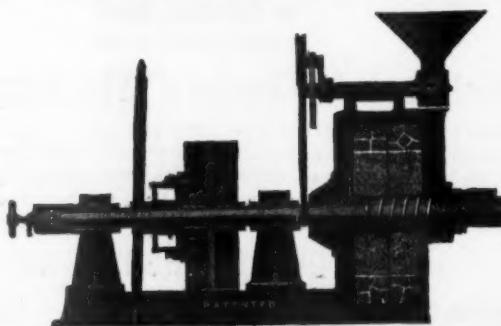
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ROCK AND ORE REDUCING MACHINERY.

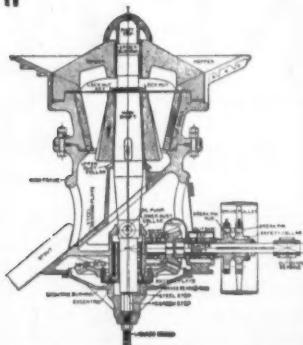
STURTEVANT MILL COMPANY

105 CLAYTON STREET.

BOSTON, MASS.



THE AUSTIN GYRATORY CRUSHER IS THE ONLY ONE HAVING AN AUTOMATIC OILING SYSTEM.



The strain on the bearings of a gyratory crusher is so great that if dust reaches them or if imperfectly lubricated they are certain to be quickly destroyed and the machine laid up for repairs. The bearings of the "Austin" are enclosed in a double chamber—absolutely dust proof—and are lubricated by a constant circulation of live oil forced through the main eccentric bearing—which is the life of the machine—by an automatic pump operated directly by the gyratory movement of the main shaft. The lubrication must be perfect because the flow of oil is constant and positive.

In all other gyratory crushers there is only the discharge diaphragm to separate the dust from the bearings and gears, and a side door opens directly into the chamber containing the bearings. Dust gets into this receptacle readily and destroys the gears.

Immediately below the crushing head, in the "Austin" is placed the discharge diaphragm with dust collar the same as in any other gyratory crusher. Below this partition is a second diaphragm also provided with dust collar around the shaft and a dust cap covering the pinion, contained in no other crusher, en-

closing the bearings in a double dust proof chamber and making it simply impossible for dust to reach the bearings.

At the bottom of the frame in the "Austin" is an oil cellar which is filled with oil to the level of the center of teeth in the main gear.

An automatic pump draws pure oil from this cellar, forces it through the eccentric and counter shaft bearings and any oil thrown from the teeth of the driving gear is caught by the cap and carried back to the cellar.

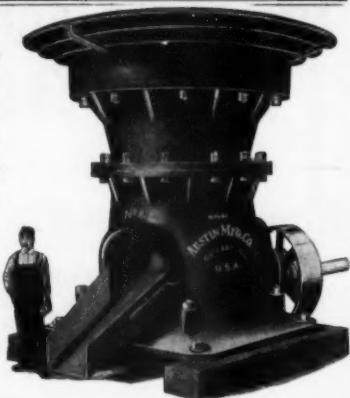
At the bottom of the cellar is a drain by means of which the impure oil can be removed insuring absolutely perfect lubrication because every part of the bearings operates continuously in a bath of pure oil.

One never has to expose the bearings of the "Austin" to dust when in operation. Fill the oil cellar to the required height and the machine must oil itself since no oil can escape from the oil cellar and therefore maintains a constant level.

Sizes for all requirements.

We are the world's largest builders of rock and earth handling machinery.

Catalogues of all departments on request.



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Do you use the Raymond System of Pulverization and Air Separation? Would you use it if you knew it would SAVE YOU MONEY and INCREASE YOUR EARNINGS? Write to any of the following satisfied customers:

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WESTERN DRY COLOR CO., Chicago: In the three years we have used your mills they have worked to our satisfaction, turning out a uniform fine product and requiring but few repairs.

THE IOWA PAINT MFG. CO., Fort Dodge, Ia.: We have used one of your cyclone mills for eleven years, and we highly recommend it after that long service for first class pulverizing work. Your machinery needs but little attention and if it has a fair show it will give perfect satisfaction.

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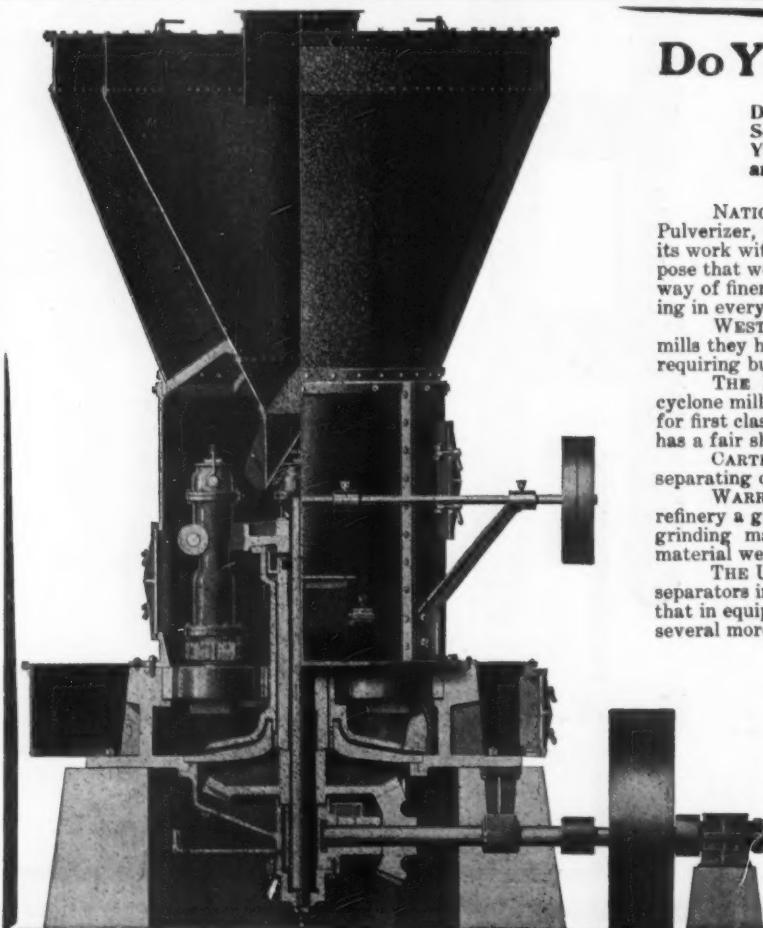
THE UNITED STATES GRAPHITE CO., Saginaw, Mich.: We have used your separators in our plant here at Saginaw upwards of ten years with such satisfaction that in equipping the new plant which we moved into only a year ago, we installed several more of them.

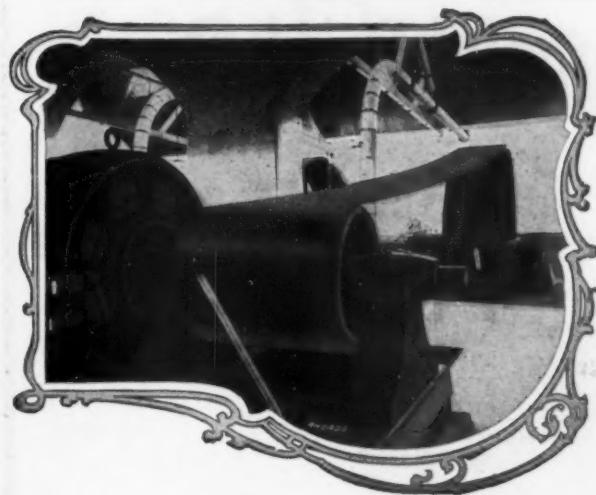
These are a few out of the many, all highly satisfied users of the RAYMOND SYSTEM. How would you like to travel in their care-free class?

Raymond Bros. Impact Pulverizer Co.

141 Laflin Street.

CHICAGO





43-inch Three-ply Rhoads Volta Dynamo Belt.

Rhoads Leather Belting

For high speed under the trying conditions of cement mills, Rhoads high grade short lap has long proved its superiority in service.

Rhoads Cement Mill Belt Dressing is specially compounded to avoid caking in the surface. It preserves the belt and gives it grip. It is a trouble saver.

Write for our Catalogue. It Gives Much Information of Value to Belt Users.

J. E. RHOADS & SONS,

PHILADELPHIA: 12 North Third Street.

NEW YORK: 40 Fulton Street.

Factory: Wilmington, Delaware

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a brick wall **Better** than any on the market are the *Leader and Acme* Wall Ties for solid or veneer walls. Manufactured by

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RANSOME TWISTED STEEL BARS

For Reinforced Concrete Construction.



IMMEDIATE SHIPMENT. ALL SIZES IN STOCK.

No charge for cutting to required lengths.

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Long Distance Phone, Harrison 1886.

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DRYERS

FOR

**BANK SAND
GLASS SAND
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COAL, ETC.**

All Mineral, Animal and Vegetable Matter.

We have equipped the largest plants in existence and our dryers are operating in all parts of the world. Write for list of installations and catalogue S. C.

American Process Company

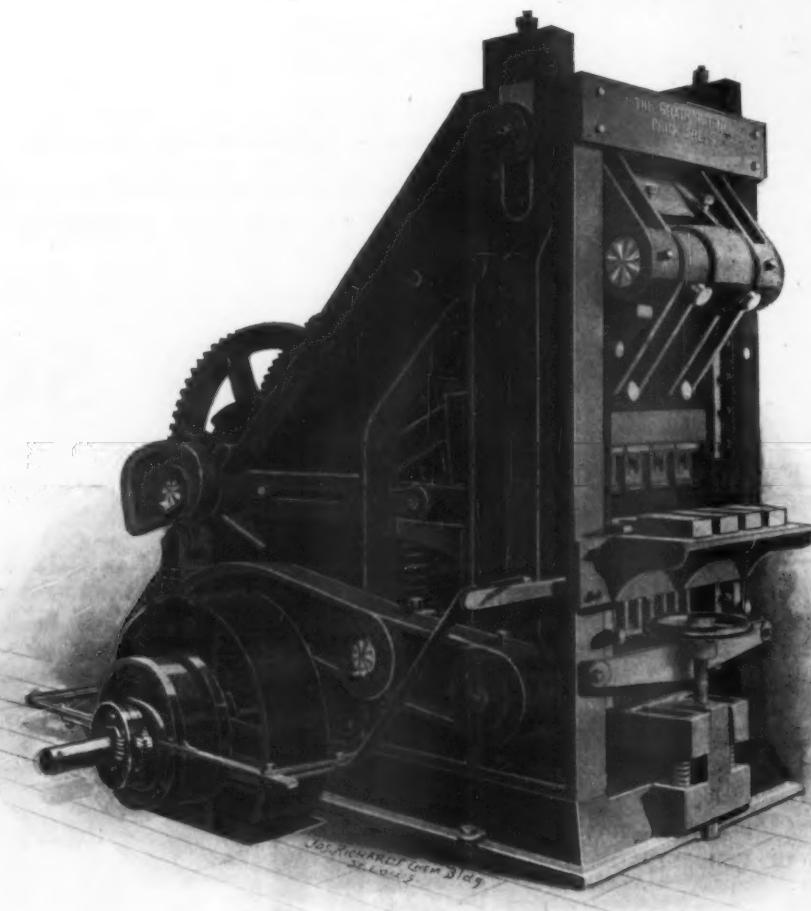
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NEW YORK CITY

The Grath Four Mould Special Brick Press

For Sand-Lime Brick of Highest Grade,
also for Highest Grade Dry Press Brick.

Built in
Two, Three,
Four and Five
Mould Sizes



Only Press
Built on Cor-
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Only
Modern Press



Simplest and Best as Well as most Powerful Brick Press ever built. Guaranteed to make better brick than any other Press and to give complete satisfaction. Guaranteed against breakage. **Only Press Free from Side and Cross Breaking Strain.** Impossible to strain or twist crank shaft.

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Illinois Supply and Construction Company

Suite: 512 and 513 Colonial Security Building

ST. LOUIS, MO.

"Brownhoist" Locomotive Crane

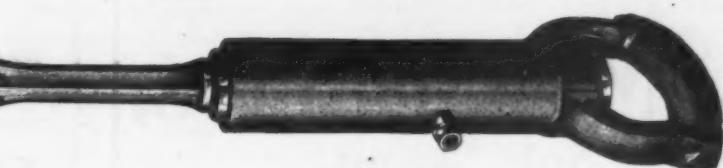
Equipped with clam-shell loading bucket offers the greatest capacity as well as economy for handling sand and gravel in the pit. Crushed stone and screenings loaded and rehandled at minimum cost.

Advance Your Profits by Increasing the Output.

The Brown Hoisting Machinery Co.

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**EQUIPPING the QUARRY with
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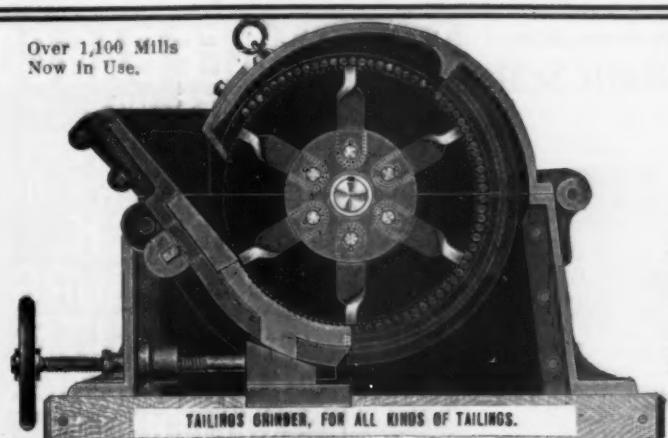


Means the Most Rock Drilling in the Shortest Time With the Least Expense.

Write for Descriptive Catalog

HARDSOCC WONDER DRILL CO. Ottumwa, Iowa. U. S. A.

Over 1,100 Mills
Now in Use.



TAILINGS GRINDER, FOR ALL KINDS OF TAILINGS.

**RAW MATERIAL
Grinders**

UNIVERSAL for Tube Mill Feed, 800 bbls. per day 20 mesh.
VULCANITE for $\frac{1}{2}$ in., $\frac{1}{4}$ in. and $\frac{1}{8}$ in. work.
We also grind Lime, Gypsum, Coal, Etc.

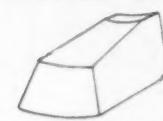
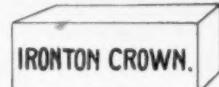
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ASHLAND FIRE BRICK CO.
ASHLAND, KY.

LIME KILN LININGS.



GROUND CLAY
FOR
WALL PLASTER
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BOILER SETTINGS

CAROLINA PORTLAND CEMENT CO.

We are the largest distributors of Portland Cement, Lime Plaster, Fire-brick and General Building Material in the Southern States, and have stocks of Standard Brands at all of the Atlantic and Gulf Seaports, and at our interior mills and warehouses, for prompt and economical distribution to all Southern territory. Write for our delivered prices anywhere.

Also Southern agents for the "Dehydratine's" waterproofing material. "Universal," "Acme" and "Electroid" Brands Ready Roofing. Get our prices.

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RUGGLES-COLES ENGINEERING CO.
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Silk, Fine Wire Cloth.

Mixing and Sifting
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Cummer Dryers

See Other Ad.
Page 76.

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Cleveland, Ohio.

BRICK and MORTAR COLORING

After twenty years "CLINTON" colors still stand at the head. Get the genuine, with the "Little Yellow Side-Label."

CORRESPONDENCE SOLICITED.

CLINTON METALLIC PAINT CO., CLINTON, N. Y.

J. K. WILLIAMS & CO.
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The Largest Manufacturers in the U. S.

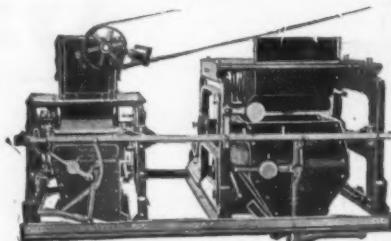
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COLORING**
OF ALL SHADES.

Correspondence Solicited. Samples and Estimates cheerfully furnished on application.

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Designers and Builders of the
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Designing and Installing a Specialty.

YOU may make a mistake in your mixtures, but the
Richardson Automatic Scale
CAN NOT



The Richardson weighs accurately, proportions of Sand, Lime, Brick, Color and any other materials.

RICHARDSON SCALE COMPANY,
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also Chicago and New Orleans

MILWAUKEE BAG CO.

MILWAUKEE, WIS.
HIGH GRADE PRINTERS
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DUCK,
OSNABURG
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CEMENT BAGS.

DEALERS IN
PAPER BAGS & TWINES.
WRITE FOR PRICES & SAMPLES.

Rock Products

DEVOTED TO THE PRODUCTION
OF ROCK AND ITS PRODUCTS

SEMI-MONTHLY.

Entered as second-class matter December 16, 1905, at the Post Office at Louisville, Ky., under Act of Congress of March 3, 1879.

THE FRANCIS PUBLISHING COMPANY,

Publishers.

E. H. DEPEBAUGH President.
A semi-monthly trade journal devoted to the interests of the manufacturers and dealers in rock products and kindred lines, including Lime, Cement, Salt, Sand, Slate, Granite, Marble, Sandstone, Grindstones, Artificial Stone, Emery Stone, Quarries, Monuments, Manganese, Asphalt, Phosphates, Plaster, Terra Cotta, Roofing and Roofing Tile, Coal, Oil, Mineral Wool, Brick, etc.

EDITORS.

E. H. DEPEBAUGH. FRED K. IRVINE.

ASSOCIATE EDITORS.

HENRY C. WHITAKER Barre, Vt.
ALEX. CRISTADORO New York.
 Regular Staff Correspondents in the Principal Centers.

The mission of ROCK PRODUCTS is to serve the trade in any and every honorable way possible, to promote better profits and make life more pleasant for those engaged in the business to which it caters. With this end in view, criticism is courted, and all are invited to use its columns to further ideas and suggestions for the good of the trade. The office, too, is at the service of the constituents of this paper, so when you want to buy or sell, or merely ask a question, write, and when you are in town, call and make it your headquarters.

"TELL 'EM YOU SAW IT IN ROCK PRODUCTS."

No contracts will be accepted with advertising agencies, as our system for promoting the interests of patrons requires direct co-operation.

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SUBSCRIPTION RATES, \$2.00 per annum, postpaid anywhere in the United States, Canada or Mexico; \$3.00 elsewhere in the Postal Union. Single copies, 10 cents.

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LOUISVILLE, KY., MARCH 22, 1907

Some Thoughts Upon Transportation.

OWING to the many disappointments in the business year just past the people of this country have taken up the study of the transportation problem. It at once becomes apparent that little or no relief for our internal transportation problem can be expected from the railroads. True within the last few months "they have got busy" in the direction of building box cars and locomotives. Car shops that were shut down for years have been put into commission, and with unpracticed help, (this last condition occasioned by the long shut down) they are paying double price for a poorer grade of box cars than were ever turned out of the shops. When all the cars are in commission that can possibly be produced by the shops running to the limit of their capacities day and night, although the figures look big, it will really contribute but a small percentage of increase in the total amount of available car equipment. In fact, the new equipment that can be run out of the shops will not afford any such improvement in the service so that anybody could notice it. A large percentage of the shop capacity will be taken up with repairs and keeping worn-out rolling stock in commission. It will be impossible to run the shops up to their full capacity, because the delivery of indispensable supplies can not be maintained with any degree of regularity.

One of the most prominent railroad magnates announces that it would be necessary to build and

equip 75,000 miles of new road to relieve the traffic demands of this country based upon the commercial activities of 1906. He estimates that the 75,000 miles of railroad, according to the current prices of materials and labor, would cost between five and six billions of dollars, and would require at least five years of time to be completed and put into effective operation. This country has no such sum of money available for railroad construction and equipment, and even if it was forthcoming, if the population and commerce of the country should continue to increase in the coming five years by the same ratio that it has increased in the five years past, at the completion of this five years of active railroad construction the country would be in exactly the same predicament as it is today.

The transportation question is the only problem of serious importance to the commercial interests of the country at this time. It directly reaches all the individuals of the population who go to make up the great common people, and they are the final masters and owners of the entire contents of this country, whether it be real wealth, vested, or movable assets. Imperfect transportation service has raised the price of every barrel of flour, every barrel of cement, every other indispensable supply and everybody knows it. So the cry is for an improvement, beyond anything that the railroads can accomplish, in the direction of transportation. Further, the improved service and facilities must be provided at something like half the cost that is now levied and collected from the consumer.

The improvement and maintenance upon a higher plane of efficiency of our internal waterways is the only possible solution that offers present relief and at the same time provides for the future, in such a measure as can be made to take care of all the requirements of commerce without limit. If we had adequate terminal facilities provided with transferring machinery to minimize the cost of rehandling, there is floating stock enough and motive power sufficient, actually available at this moment together with copious tides in the streams to entirely relieve the present congestion throughout the great Mississippi watershed in thirty to sixty days time by intelligently directed effort. The railroad promoters for more than a generation have systematically obstructed the progress of improvements at the terminals connecting with our internal waterways. There was an excuse for such a policy on the part of the railroads thirty years ago, for the extent of our commerce and the volume of possible traffic seemed to be below the quantity of business necessary for a railroad to handle in order to make expenses. In looking over the schedules of classifications it now becomes apparent that 85 to 90 per cent of all the freight that is offered for transportation must be handled by the railroads at a loss, or if they fix their rate upon a basis which will pay all costs it is condemned by the public as being too high. On the higher classifications of freight, which really represent only ten or fifteen per cent of the great traffic of the country, must the railroads then derive their net earnings. The burden of deficit occasioned by transporting commodities that are really too heavy to be included in railroad calculations for long distances must be overcome by advanced charges upon the lighter classifications of freight that are handled by railroads with great profit. It is easy to see that if the railroads could be relieved of a large part of the traffic which is now unprofitable to them, the efficiency of the equipment at present available would be multiplied, and much the larger part of this long haul relief would be handled by them as a local proposition from the point of production to the river terminal and from some other river terminal to the point of final delivery. This would feed the local traffic account of every railroad now in operation, keep their equipment at home and largely reduce the big

expenses occasioned by practically unlimited car distribution. All of these advantages to the railroad are considered to be their best basis for increasing the profits.

The adequate equipment of our internal river terminals means to the manufacturers of building materials of every description, as soon as it can be accomplished in an intelligent way, an economy that amounts to more than the factory cost of the commodity which they produce, whether it be cement, stone, brick, or iron. Besides all this, it will open markets for the distribution of supplies that have hitherto been considered impossible, or the enormous cost of carriage by rail has made these heavy commodities too high in price to be considered seriously. The normal growth of business, with its ever increasing volume of output, demands that these distant markets be reached with economy, and that new points of distribution be established at waterway terminals where the increasing population is constantly calling for more supplies which can not with present facilities be delivered to them.

THE crusher operators are awake to the fact that the basis of calculation for crushed stone is all incorrect and unfair to the quarrymen. When they attempt to deliver stone by the yard based on road measurement, the amount of stone required depends upon how much the inspector scatters the stone, and how many depressions and pockets there are that have to be filled. The freight bill which amounts to at least as much as the cost of the stone at the crusher is paid for by weight, and the only equitable basis is to sell the stone by the ton at the crusher. This is both the more intelligent and accurate way of getting the road contracting business upon a better basis.

THERE is a decided awakening in the direction of hard wall plasters made from calcined gypsum. This interest, if properly fostered and developed, means that there is going to be more money in the stucco business from the standpoints of both the manufacturer and the dealer. When we get a set of standard specifications it will probably cost more to get "standard stucco," but it will be worth the money and cheerfully paid by the consumer. He wants to work out extravagant designs for interior finish in a moderate priced material with the assurance that it is going to last long enough to pay for the workmanship devoted to it, and at the same time sustain permanently rich effects in coloring and relief modeling.

OUR correspondence indicates that the concrete engineers who are directing the activities in the line of reinforced concrete construction, have carefully studied the failures and bad practice of the past, and are prepared better than ever to give good service with more scientific and perfect results than we have ever yet had. The employment and disposal of the reinforcing members are not only better understood in the light of all the carefully compiled and scientifically correct reports, together with the resulting calculations and discussions, but there has been a more advanced study of the concrete aggregate; and this inevitably means a denser, more uniform, and more scientific concrete for future structural work. Undoubtedly a more perfectly prepared aggregate will raise the price to some extent, and it is well worth the additional money.

THE festive road contractor in the spring time lightly turns his thoughts toward the renewal of friendships with his friends who happen to be elected County Commissioners. There are miles and miles of roads that will be built this summer to keep the crusher man busy even beyond the capacity of his plant. Fear not it will take a hundred years to build all the roads that ought to have been built a hundred years ago.

Editorial Chat

Recuperating in Florida.

When you look at one of the pictures on this page you will undoubtedly think that it is an ambuscade of Filipinos in that wild and woolly tropical country. The prominence of the artillery in the photograph clearly indicates that the men are in no danger, and if you had a spy glass that would reach all the way to Florida you would see that this group constitutes a bunch of the finest fellows on earth, who are old friends that you've been loving steadily for a long time. With this assurance the gentle reader will no longer be afraid to draw near and look into their countenances, for behold this picture is taken in the heart of the city of Rockledge, Florida, and these are mighty hunters, just now busily engaged in bringing down the over-confident duck, before she flies to her northern summer home. It goes without saying that all of these fellows are good hunters. They have hunted other things besides ducks and always with success so it is said. However, there has been some complaint recently about them losing their reputations for



THE FELLOWS WHO HUNT FOR BIG GAME.

some of them have been hunting for cars without results for six months. We do not blame them for this, however, because it seems that the *rara avis* has recently become extinct, probably John Kling got the last car there was. You will find him looking contented in the center of the picture. Oh, yes, the supply of ducks, which are concealed beneath the bushes just to the rear clearly indicates that the other things that they have been hunting for have been found in great quantities.

Here are John A. Kling, president of the Cleveland Builders Supply Co., Jack and Jim McCready, of Braddock, Pa., and Charles C. Classon, of Baltimore, Md., all prominent members of the builders supply dealers' fraternity, who have been down in Florida all winter recuperating, so as to come back to the business world this spring with renewed energy and vigor to help push on the business progress of this country. As every one of them is a captain of industry, we salute them as officers.

In the Lime-Light Actually.

Everybody knows W. W. Coney, of the Moores-Coney Co., Cincinnati, O. He is a prominent member of the National Builders Supply Association and has served on the executive committee. Incidentally he delays every meeting that the committee holds, because the railroads have made "Bill" so many excuses about slow delivery that whenever he travels they hold the train back on purpose to convince him that the "dope" which is sent to him continually from the freight department is the truth. At the recent convention of dealers at Columbus, they were waiting on Coney as usual, in order to get a quorum. When he arrived at last he announced that there hadn't been a train on time for six months. "I've got the complete records in the office now at Cincinnati, and can prove that nobody has got a right to expect a train to arrive until the next day after the schedule," said he. If you will look all over this page you probably wouldn't be able to identify Mr.

Coney's picture. ROCK PRODUCTS had a staff photographer in Cincinnati recently. Lawson Moores was standing in the door of the office and said that the only news that he had worthy of quoting in ROCK PRODUCTS for the edification of both the manufacturers of cement sewer-pipe and fire brick, as well as the entire National Association, was that Coney had turned over a new leaf and decided that hereafter when there is a good show that he would take in a matinee occasionally. Upon further examination it was found that Mr. Coney had never attended a matinee at any of the palatial theatres of his home city, in spite of the fact that Cincinnati has the reputation of being the best show town in the country outside of New York City, and further, this man is really guilty of ingratitude for he furnished lots of the brick, cement, plaster, lime and other building materials which went to erect some of the finest theatres in the world. The picture man followed into the Walnut street Theatre where some Hermann the Great, or a greater than he, was explaining exactly how all his wonderful tricks of legerdemain can (*not*) be performed. Imagine the consternation of the writer to behold W. W. Coney in the center of the stage with white rabbits and canary birds coming out of every pocket in his clothes, while the magician held him transfixed with a short fairy wand. When our friend opened his mouth to expostulate, five canary birds instantly flew out, singing sweetly as they fluttered away, and just at this instant in the exhibition, the picture on this page was snapped. Nothing could express the delight of the large audience. They applauded the work of the great magician because Mr. Coney is respected and trusted in his home city, and they knew that he had not loaded up his pockets with canary birds and hares to help out the show, because his character is above reproach, and besides nearly everybody in Cincinnati knows that he is just a little behind the times when it comes to standing before the footlights.

He had a grin that would have reminded you of Roosevelt's "dee-lighted" after the thing was all over, and said with reference to the rabbits and birds: "Of course I didn't know I had 'em, but in these days of rapid development you can never tell what a Builders' Supply Dealer may be called on to deliver. I consider my theatrical career, which I only undertook as a side line anyhow, highly beneficial to my supply business, for it has convinced a large number of citizens of Cincinnati that I can produce anything that they have a mind to ask me for, and I really don't know of anything that is not in the supply line at the present time." Really he is all swelled up about it, but he can tell the details much better that we can.

J. A. Fairleigh, of the Western Cement Co., Louisville, Ky., than whom no one has a wider acquaintance throughout the South among the builders supply dealers, because they know him as the "Louisville Cement Man," which by the way is not to be interpreted as meaning that he is constructed of cement or anything of that kind, says that the outlook in the South for a great building season was never better than at this time. The men who handled larger quantities of building material than ever before, last year made some money, and with this kind of encouragement they are pushing still further ahead into greater things.



"THE KING OF IRELAND."

St. Patrick's Day in the Morning.

Here is our KING OF IRELAND,
Shure he's a hearty lad;
His smile will warm a heavy heart
And drive away the bad.

He dearly loves the GOOD OLD SOD,
And has a purty trick,
Of sellin' stuff to turn that same
Into a GOOD RED BRICK.

This is the first thing that came in front of our camera on the seventeenth of March, and we can't refrain from handing it over for the edification of the reader. John J. Moroney has always got a chip on his shoulder and has a shamrock in his heart even if you can't see it on the outside. He has just started out from his office at the Great Northern Building, Chicago, and expects to meet a sand-lime brick manufacturer and give him the press he has been looking for all this time, for when the railroads can't put the deliveries over, John just takes them out himself.

Expects Active Southern Season.

C. A. Monks, of the Southern Roofing & Paving Co., Louisville, who is one of the heaviest contractors of the South in the line of reinforced concrete construction, says that he is getting busy to begin an active season with contracts already in hand to make a fine beginning and with the assurance that reinforced concrete continues to grow more popular, he doesn't see how there can be any let up. He has used Ransome twisted bars from their first introduction and has put up some of the best concrete work in the country.



W. W. CONEY, OF CINCINNATI, DELIVERS THE GOODS.

From Our Own
Correspondents.

AROUND SYRACUSE.

SYRACUSE, N. Y., March 15.—The prospect in building circles is better than it has been in several years. Especially bright is the outlook for concrete work. Building permits for \$150,500.00 new, and \$31,910.00 repairs, were granted during the month of February, nearly double the figures of February for a year ago. It looks as if cement would be higher as the manufacturers are asking \$1.10 to \$1.20 at the mill net.

The firm of Hill and Van Wagner has been formed to succeed Joseph M. Hill and will do business in concrete construction, hollow building blocks, concrete block, sidewalk laying, fireproof floors and general contracts pertaining to these lines. The firm has an office at 403 Kirk Block and has rented the old Penn & Lee plant on Canal street, where they have the advantages of both railroad and canal to ship in their raw material and ship out their products. This firm will job Portland cement. They are now laying a floor for Nann & Kress, proprietors of one of the leading cafes in Syracuse, and they have 150,000 feet of sidewalks planned for immediate construction. According to Mr. Hill, the outlook is bright as the architects are specifying more concrete than ever.

The Empire Portland Cement Co., at Warners, which has been making improvements costing \$35,000.00 is ready to open its factory. The plant has been completely overhauled and the installation of new machinery now gives it a capacity of 800 barrels a day or about 175,000 barrels during the season. H. S. Hayden, of Syracuse, general manager, says that the prospects are the best in the history of the company. The output has all been contracted for for the year and employment will be given 120 men. It is the plan of the company to continue to improve the property until they have a capacity of 1,500 barrels a day.

The concrete finishers of Syracuse have formed a union but it is too early exactly to learn what the result will be. One of their rules is that no helper can become a full-fledged finisher until he has served three years as a helper. Thus far they have not made any stand for higher wages or shorter hours.

Syracuse gained 171 per cent in building operations in January over January of a year ago. This gives Syracuse second place among the cities of the country in the way of gain.

The Paragon Plaster Co., of Syracuse, has bought the building and stock of the Watertown Builders Supply Co., and will open a branch in that city.

C. J. Sullivan will begin laying sidewalks about April 1, having a lot of orders on hand at present. He also has a large number of orders for cement blocks which he will manufacture with the Ideal machine. Mr. Sullivan has just sold 5,000 barrels of cement to the Syracuse Rapid Transit Co. for paving work and he is negotiating with the same concern for 200,000 Johnsonburg block.

O'Brien & Hoolihan, contractors, are in the market for 40,000 barrels of cement to be used on the Barge canal.

The Syracuse Bridge Co. will use a large quantity of cement in the construction of a bridge over Onondaga creek at Plum street.

Harvey E. Dingley, president of the National Wall Plaster Co., says the car service has improved somewhat, although some lines refuse shipments to New England on account of the congestion of their freight business.

James E. Hubbell, former county clerk of Onondaga county, has bought a tract of gypsum land near Jamesville and is opening up the quarries.

J. W. Frasier, at 302 Broadway, Joplin, Mo., is going into the manufacture of artificial stone on a more extensive scale. He has been interested the past ten years in stone work at Joplin and will now take on this additional department. Mr. Frasier has done some preliminary work the last few months in artificial stone that has proven highly satisfactory.

CLEVELAND AND NORTHERN OHIO.

CLEVELAND, March 10, 1907.—Although the building season has scarcely opened up as yet in this vicinity, considerable business is being secured by the various cement and concrete construction companies located here. The outlook for the best year yet experienced in the building trade continues good and the number of big buildings projected increases from week to week.

Perhaps the most noticeable feature of the past month is the advance announced in the price of cement. While not large it will mean a difference with concrete men in estimating on big jobs. The Kelly Island Lime and Transport Co. has advanced the price about five cents a barrel from all of its depots. The Diamond Portland Cement Co. has also notified its customers that there will be an advance in cement prices for delivery this year.

Commencing May 1, the railroads announced that there will be a raise in rates of five cents per barrel on cement shipped to Ohio from eastern states. This is in accordance with the raise in rates on all commodities handled by the railroads. The extra cost of freight will naturally be added to the cost of cement and concrete work will be a little costlier than last year.

Never before has the volume of concrete work been attempted as that which has been planned for this year. Every construction company in Cleveland is figuring on large numbers of structures and the increase in the use of concrete in foundations and for fireproofing has doubled in the last twelve months, according to local estimates. The enactment of the new building code has made it necessary to use a great deal more concrete than heretofore, and this fact is proving of value to those concerns engaged in the concrete trade.

Bids were opened for the interior finishing of the new federal building. Only two bids were presented, owing to the fact that the amount of money on hand does not begin to approach the sum required for the work. John P. Gill & Sons offered the low bid of \$1,382,921.00 and the Reaugh Construction Co. also of Cleveland entered a bid for \$1,400,000.00. This included all the interior concrete, marble and mosaic work. The bids are about twice the amount of the sum now available for the purpose and it seems that if some arrangement is not made to proceed with the building piecemeal that work will be suspended until Congress meets again and makes another appropriation. The number of big eastern firms which contemplated bidding on the contract backed out when they found the amount of money the government has left to spend on the job. It has been suggested that plaster be substituted for much of the marble and wood for the bronze but this has met with protest.

A colony of concrete block houses is being built by the Schatzinger Consolidated Realty Co., in its new allotment on Coit avenue in Glenhaven. Nineteen houses have already been erected and twenty more are in course of erection. The first batch are ready for occupancy and the others will be in shape to live in by the middle of the summer season. The blocks are manufactured by the company at its own plant which is in the neighborhood.

E. B. Gillespie, of Pittsburgh, who has invented a novel burial vault out of a new kind of cement, has been negotiating for its sale to the Acme Cement Stone Co., of this city. A model of the vault submerged in water for a week failed to show any traces of moisture penetrating it. Gillespie came to Cleveland a few days ago and got into temporary trouble over a hotel bill but was soon cleared. He expects to dispose of his invention to Cleveland parties.

The General Fireproofing Co., of Youngstown, O., has amended its charter so as to increase its capital stock from \$500,000.00 to \$900,000.00, the increase being preferred stock, bearing seven per cent interest. The general increase in the volume of business being handled by this concern accounts for the move.

The Mason Contractors of Cleveland have formed a Mason Contractors' Association. The following officers have been elected: W. L. Webster, president; William T. Paul, vice president; J. J. King, secretary and treasurer. The board of trustees consists of Joseph Leghorn, Frank Crockett, F. Lindhorst and Samuel Vokes.

The Cleveland Builders' Supply Co. report a distinct increase in business during the past month, with indications of a busy season ahead.

John A. Kling, president of the Cleveland Builders' Supply Co., has filed suit for \$200,000.00 against the Cleveland Building Co., which operates the Gar-

field building where the company's offices are located. Last May Mr. Kling, while stepping from an elevator, was so seriously injured that he was laid up for months. Indeed, he has been spending the last six weeks in Florida in an effort to recuperate his broken health.

The Cleveland Building Block Co., with offices in the Rockefeller Building, reports good business ahead for the current season. New machinery has been installed and the capacity of the company's plant has been increased. The concern is busy now figuring on estimates for buildings to be erected this summer.

At the Diamond Portland Cement Co.'s head offices in the Williamson building it was stated by the manager in charge that cement had advanced slightly in price with the first of the present month. The company is increasing the facilities at its plant which is located north of Canton.

The Kelly Island Lime and Transport Co., complains that the car shortage is affecting its business more seriously now than ever before at this season of the year. The mammoth company is two weeks behind with its orders. The concern is now established in its handsome new quarters in the Rockefeller building.

Work is progressing rapidly on the new stone crushing plant, being erected at Kelly Island. It will probably be in shape to operate next month. The big crushing plant at Marblehead, said to be the largest of its kind in the world, which has been running for three or four months, is turning out huge volumes of crushed stone which is being shipped as rapidly as cars can be secured for the purpose.

Navigation for the eight boats operated by the Kelly Island Co. is expected to open about April 1, or soon thereafter. The concern will this year add to its fleet the largest boat yet secured. It is at present being built at Algonac, Mich., at a cost of about \$40,000.00. It is a 2,000 ton vessel and modern in every respect. It is to be named for Dwight Cutler, son of D. G. Cutler, a vice president of the Kelly Island Lime and Transport Co.

The Ohio Ceramic Engineering Co. is to have its plant, which was burned down about a month ago, rebuilt by the Carey Construction Co., of Cleveland. The engineering company make a large line of concrete blocks and brick making machinery. The new structure will have about 40,000 feet of floor space under roof and will be of concrete and cement, with the exception of portions where the old brick walls will be used again, they not having been ruined by the flames. The work will cost about \$30,000.00 and will be finished early in the summer as the Carey company has promised to push it through as fast as possible.

The Carey company has the new concrete school house for St. Stanislaus parish up nearly to the second floor. The company has also closed a contract for a \$7,000.00 boiler house to be built of concrete, and in direct connection with the school. The same company is busy putting the finishing touches on the big plant of concrete erected at Indianapolis for the Longsenkamp & Wheeler Brass Co. It is costing about \$50,000.00 and is unique inasmuch as it contains the longest unsupported concrete beams on record, they having a span of fifty-seven feet.

The National Fireproofing Co., of Cleveland, is busy finishing up the plant of the Glidden Varnish Co. in this city, which consists of twenty-seven separate buildings, in all of which concrete is the material most extensively used. Building blocks made by the Cuyahoga Building Block Co. have also been used to some extent in the structures, some of which have been faced with brick. The fireproofing company and the building block concern work in conjunction with each other to a great extent and find that the practice is a good one. The plant of the Cuyahoga Building Block Co. has been doubled in the last few months and a large amount of stock is now being turned out. Among other contracts these two firms are handling is the building of a large factory for the City Forge Co.

King Bros. have installed a cement block factory at Garden City, Kan. Within thirty days they will be turning out cement blocks on a large scale for the wholesale trade. The plant cost about \$7,500.00.

One of the chief industries of Washington County, Kan., will be the Dewey-Portland Cement Co.; when it begins operations about July 1. The plant is located about a quarter of a mile northeast of Dewey, Kan. The company owns about 270 acres of good rock land. Two hundred men will be employed in the plant.

IN THE WINDY CITY.

CHICAGO, March 19.—Now that the winter season has passed building operations are commencing with the activity anticipated by the material people last fall, and this year will see greater feats in construction accomplished than ever before. Within the next six months eight large buildings, the cost of which amounts to more than \$12,000,000.00, will be completed and ready for occupancy and which will be filled within a short time as there is an unprecedented demand for office space. Factory and warehouse construction during the past year has seen a great boom in Chicago and demands for well located sites with railroad facilities have been far in excess of the supply. One noticeable feature in building is the demand for better materials, and a more elaborate style of architecture. Material manufacturers are being pushed to their utmost capacity to supply the orders and the best prices are being obtained.

The Thompson-Starrett Co. has the contract for the erection of the plant of the Corn Products Refining Co., which is to be located on the drainage canal near Summit, Ill. This company has recently purchased a strip of land one mile long and several thousand feet wide on the canal and will erect a plant of twenty-one buildings to be constructed of reinforced concrete. Over 200,000 barrels of cement will be required in the construction.

From the reports of the crushing plants in this vicinity everything is in a most flourishing condition and the crushing machinery manufacturers say that the same condition exists in all parts of the country. Most of the plants have been running all winter and while the sales are not as heavy now as they will be later the crushing people are glad to pile up stock so that when the rush begins they can keep up with orders. The next few months will see several new plants in operation and marketing their products in Chicago. There is a big demand for crushed stone so it will be an easy matter to dispose of the increased output. The plants that have stored large piles of screenings for years are now finding a market for their products as many engineers specify limestone screenings for underground and caisson work.

The Young Stone Co. are going to build another crushing plant near their present location at Lemont, Ill. They will put in a crusher, and they have let the contract for the transmission machinery, a 58 foot elevator and a 40 inch by 16 foot screen to the Power and Mining Machinery Co.

The Chicago and Northwestern Railway have closed a contract with the Austin Manufacturing Co., for two crushing plants they will erect on their line from which they will furnish the ballast for the road bed. One is to be located at Peebles, Wis., and the other at Cedar Rapids, Ia., and they are to be the same in equipment. They will install No. 7½ and No. 5 crushers, elevators, screens, two hoists and twelve rear end deep quarry cars at each plant.

The Chicago Union Lime Works have secured a fine piece of quarry property at McCook, Ill., and adjoining the property recently secured by the Artesian Stone and Lime Works. They will erect a crushing plant and will install one No. 8 and two No. 5 crushers, with provision for two No. 3 crushers to be installed as soon as needed. The remainder of the equipment consists of five screens, two elevators and complete transmission machinery, which, with the crushers, will be furnished by the Power and Mining Machinery Co. A 20 x 36 Corliss engine will be installed by the Allis-Chalmers Co.

William Hammerschmidt, of the Elmhurst and Chicago Stone Co., is one of the busiest men in Chicago these days for he is buying additional machinery for his crushing plant. He will enlarge his buildings and put in a No. 7½ and a No. 4 crusher, elevators, etc., and install an electrically driven individual motor. This will be one of the first crushing plants to be electrically equipped.

The American Torpedo Sand Co. will put in a locomotive at their pit near Algonquin, Ill., to enable them to handle their cars with greater dispatch.

The Clarkson Lumber Co., of Milwaukee, Wis., is making arrangements to erect a lime kiln at Port Arthur, Can. They will ship the limestone in and burn it at their plant.

Nels Erickson, of the Medium Hollow Block Co., Minneapolis, has patented a material for waterproofing concrete blocks, as well as making them everlasting. He recently advertised to furnish the principle free on application, adding that it cost him \$25,000.00 to learn it.

IN THE NORTHWEST.

MINNEAPOLIS, MINN., March 13.—The building season is slow to develop strongly but there are indications that it will soon be under way. There have been some additional drawbacks this year in the way of trouble in getting goods together for various work. Pacific Coast building materials have been scarce and other materials have also been handicapped by dilatory delivery which has made the early starting of work less inviting. The prospects for a complete return to normal in the matter of railroad operation seems to be a question of the future. So far as the present is concerned, it is certainly in the class with other iridescent dreams. The railroads are not catching up with their accumulated business to any appreciable extent, despite the passing of the severe weather for a month longer. They are doing far better than they could during that severe period, but the yards are badly congested with cars which are loaded and left to be moved when it becomes possible. The sidings and division points through the country are not showing any marked diminution of cars on track, although some progress is being made. Improvement will have to be more marked than has yet been the case, if the movement of materials is to be at the customary pace with the opening of spring.

The outlook for spring seems good. The demand for brick for early building is sufficient so that there will not be any surplus at the opening of the new season's kilns, and there may be a scarcity if the season shall be delayed and the first runs be not started as early as usual. Prices on common brick are higher than a year ago by seventy-five cents.

Cement is firm and there are no great stocks on hand, the current market being about \$2.00 at this time. The prospect is for as big a demand for cement this year as last, and that means that there will be no surplus.

An interesting test was recently made by H. D. Gerth, of the Fairmont Cement Stone Manufacturing Co., of Fairmont, Minn. He experimented with freezing and thawing drain tile, both clay and cement. Both were half submerged in water which was allowed to freeze solid. The experiments resulted in breaking the clay tiles every time while the cement tiles resisted the pressure.

The change of the Western sales offices of the United States Gypsum Co., from Fort Dodge, Iowa, to Minneapolis, has been completed and the offices and forces are now located in Minneapolis from which office all the sales west of the Mississippi river will be handled.

Ben Aronson, a general masonry contractor of Minneapolis, has moved his office from 29 Central Avenue to the fourth floor of the Boston block. Mr. Aronson has done a great deal of heavy construction work in the city.

Nels Erickson, of the Medium Hollow Block Co., of Minneapolis, has issued a statement in which he urges the legislature to pass a law for the regulation of the manufacture of concrete blocks. He would require a license fee of \$25.00 to engage in the business, and would fix the proportions to be used in making blocks by law. He recommends a proportion of five parts clean sand to one of cement. If sand and gravel are mixed they should be two parts gravel, three of sand and one of cement, and they should be dry mixed in a mixer. He would further require them to be watered freely until they would shed water, and would fix the heights of buildings permitted with concrete block walls of certain thicknesses. The air space should be not less than twenty-five nor more than thirty per cent.

There has been some talk at Duluth of establishing a cement mill there, to produce a Puzzolan cement, using the slag from the furnace located there.

George H. Lawes, of George H. Lawes & Co. building materials, of St. Paul and Minneapolis, died March 3, at his home in Merriam Park, St. Paul, after an illness of about five weeks. Mr. Lawes was well known in the building materials line, having been in it for about twenty years. He was first associated with the old firm of Houston & Harris, of Minneapolis, for whom he took charge of their St. Paul office. After being with them for several years, he bought the business and continued both the St. Paul and Minneapolis offices. He was born in England in 1850, and leaves a widow and one son. The interment was in Lakewood cemetery, Minneapolis.

A. G. Wass, who has been a practicing architect in Minneapolis, has taken a position with the National Stone Manufacturing Co., of Minneapolis, as sales agent and estimator.

MEMPHIS AND THE SOUTHWEST.

MEMPHIS, TENN., March 16.—The building supply trade in Memphis has been brisk since March opened up. Some large contracts have been let and much good work is being planned. A large addition to the well known Peabody Hotel will be built. A charter has been taken out for the Memphis Railroad Terminal Co., which is taken to mean that actual work will commence some time this year on the Union depot. It is figured that this job will cost about \$3,000,000.00 and terminals \$2,000,000.00 more. All the railroads entering Memphis are represented on the directorate of the new company.

The Miller Paving Co., of this city report that the paving outlook is good for this spring. They have several large contracts in hand and are taking new ones every day. A large amount of municipal work will be done this spring and summer.

J. T. Forsythe, of 42 S. Front Street, one of the leading members of the builders supply trade, said that trade was beginning to open up and that the outlook was good. His firm receives supplies by both river and rail. They find that more American cement is being handled all the time and that there is very little imported.

James A. McKim Co., of Chicago, have the contract for the eleven-story addition to the Peabody Hotel. Three hundred rooms will be added. It is said that the contract has been sublet to the West Lake Construction Co., of St. Louis. Architects Hunker and Cairns drew the plans.

The Selden-Breck Construction Co. is completing the concrete foundation work for the Commercial Appeal building on Second and Court.

J. A. Denie Sons & Co., has been incorporated. This is one of the oldest lime and builders' supply houses in Memphis and it does a large business.

The Union Sand and Material Co., of St. Louis, has filed its charter here. The company is capitalized at \$1,050,000.00, and the incorporators are: C. G. Beach, C. L. Mett and C. A. Cunningham, all of St. Louis. The laws of the state require the registration of the charters of foreign corporations before they are permitted to do business in Tennessee.

The Fort Smith Contract Co. has been chartered at Fort Smith, Ark., with a capital stock of \$25,000.00 of which \$10,000.00 has been subscribed. Angus McLeod, H. C. Speer and E. E. Nield are the incorporators.

D. S. Mitchell and W. S. Wells have formed a cement company at Guthrie, Okla., for the manufacture of all kinds of cement and concrete work. They are located at 510 West Oklahoma Avenue, that city.

At Pryor Creek, I. T., R. L. Qualls and G. W. Simpson have ordered a machine for the building of concrete blocks for walks and buildings.

The Gotebo Brick Co., of Gotebo, Okla., have added machinery to double their capacity. The plant will in the future turn out 40,000 brick a day.

The El Reno China Co., of El Reno, Okla., let the contract some weeks ago for the buildings and kiln for their pottery plant. The plant and buildings will cost about \$100,000.00. The main building is to be 145 x 130 and will be constructed of brick. The plant will employ 300 people.

The Brady River Sand Co. has been incorporated by R. C. Brady, of Tulsa, I. T., who is president; John B. Brady, of St. Louis, vice president; and H. H. Brady, of Tulsa, as secretary. The company has leased the entire river front of the Campbell oil and land company on the west side of the Arkansas river and will commence work immediately.

J. E. Thorp, of Newkirk, Okla., who recently perfected a concrete fence post, will begin the manufacture of these immediately. They are reinforced by wire.

The Wallis Concrete Co., of Houston, Tex., has been incorporated with a capital stock of \$100,000.00 by A. M. Kellett, W. D. Majers, T. J. Wallis, T. K. Fulton and Fred Holcomb.

W. E. Hawley, of Huntingdon, Ind., has been looking for lime deposits in the district about Beaumont, Tex. He will establish a plant if the conditions justify it.

The Pioneer Sand Co., of St. Joseph, Mo., has made arrangements to begin its spring work and the pumping of sand from the river will be commenced in a few days. During the latter portion of last season the company shipped about ten cars of sand a day, mainly to points in Kansas and Missouri within a distance of fifty miles from St. Joseph. The company now has a complete outfit, consisting of two dredges and a number of barges, and its capacity is about 600 cubic yards a day.

LOUISVILLE, KY.

LOUISVILLE, Ky., March 22.—The city of Louisville is in holiday attire in honor of the Greater Louisville Exposition, which has been heralded broadcast for some months past and is now in full blast. The marvelous success is in part due to the cement and concrete men, lime, sand and all other industries that bring out in full detail the capacity of this city to meet and command every need of modern times.

Among the exhibitors are the Central Construction Co., of 1161 Underhill Street. Mr. Morris, of this company, has outdone himself in his show, as he makes plain to the general public the possibilities of concrete in a way that tends to make them thoroughly understand. He goes through the whole industry, having on exhibition everything from a spring course to a copped porch column.

The Bannon Brick and Sewer Pipe Co. presents a good exhibition, showing the results of their labors in clay products, as does the Kentucky Vitrified Brick Co. They show the possibilities of the product obtained in Kentucky as well as bringing out good suggestions for the future. Altogether the efforts of all have fully demonstrated the success they have attained in the building line. Both have been awarded a gold medal on their displays.

The outlook for new building is assuming proportions every day, and while the spring is too young for any active work on the part of the contractors the work in prospect is enough to satisfy them.

Mr. Wheat, of the Utica Lime Co., said: "We have no big orders on hand at present, but the tables in the architects offices all over town are full of sketches and plans and I predict a spring season in the building line to be the greatest the city has ever seen. We are ready and our supply is adequate to meet the coming demand, and we are only waiting for the rush, and will meet it more than half way. I am not in sympathy with present prices and will make my bids within reason."

The Ohio River Sand Co. has been unable to secure a supply of any kind sufficient to meet the demand, as the big flood in January, together with the present stage of the river at this point has been the cause of considerable loss to them. Mr. Settle, of this company, thinks that the condition of the river will help them in the long run. They were able this morning to get in one barge and as the water is receding they will soon be running on schedule time, but are unable to say just when.

The National Concrete Construction Co. is preparing for the construction of a new Louisville and Nashville depot, at Frankfort, Ky., and if the present condition of the weather continues they will be able to begin the work within a few days.

Walter Gaslay, of this company, has been appointed assistant engineer to Mr. Hermany, chief engineer of the Louisville Water Works. Mr. Gaslay said that while his work was to assist in the completion of the new filter plant, which is about the largest job in concrete and cement construction attempted in this city, he has agreed in accepting the position, to give them but part of his time and will remain with the National.

They have completed their work on the Lincoln Savings Bank Building, the real sky-scraper of Louisville, and have also finished their work on the big Paul Jones Building.

THE WEST COAST.

SAN FRANCISCO, CAL., March 7.—During the month of February 659 building permits were granted by the Board of Public Works, the total estimated cost of construction being \$7,200,000.00. Announcements of new buildings to be erected are coming in thick and fast, and a considerable proportion of these will be of reinforced concrete. Skeleton steel frames with concrete curtain walls are specified in some instances and a dozen different types of steel reinforcing bars are used in others.

The erection of buildings, especially those of ferro-concrete construction, progressed steadily through the month of February and the early part of March, although there was a great deal of rain. A great deal more work would have been accomplished had the weather been favorable, but the reinforced concrete construction made a good showing in spite of the elements. Night shifts were put on in several

additional buildings, proving that concrete work can be carried on successfully under conditions that put a stop to bricklaying for several days at a time.

The cement market is said by some to be strengthening, while others claim that it is temporarily weaker, but all agree that there will be a great shortage of cement of all kinds here by next fall, owing to the immense building demand in prospect. Before that time the new mills of the Pacific Portland Cement Co., and of the Standard Portland Cement Co., will be in operation, but even the 6,000 barrels a day, which the latter company can turn out, will be only a drop in the bucket. San Francisco is already consuming nearly that amount of cement daily and the spring building boom has hardly commenced. Attracted by the prospective demand, domestic cement from the East has appeared in this market for the first time. A shipment has been received from Iola, Kan.

Prices of high grade foreign cement range from \$3.50 for Alsen, which is sold ahead, covering the arrivals for the next three months, down to \$3.10 for Hilton and a little lower for brands of less reputation. These prices are lower than prevailed a year ago when a scarcity was beginning to be strongly felt and foreign cement sold at from \$3.75 to \$3.95 a barrel. There has been a falling off in the booking of cargoes of cement for San Francisco at European ports, although a great deal is to arrive during the next three months. The best brands are largely sold ahead. Complaint is made by dealers in the standard brands of imported cement that little intelligence is displayed by many of the brokers, who ship so as to have a glut of cement at one time and then a little later a serious scarcity. The frequent fluctuations thus caused in the San Francisco prices are injurious to all concerned, both in the sale and use of that commodity.

The receipts of foreign cement in the port of San Francisco, during the month of February amounted to 118,482 barrels. During the first eight days of March, 33,291 barrels of foreign cement arrived here.

The almost unlimited demand for cement on the Pacific Coast has greatly stimulated interest in new enterprises in the line of cement manufacturing. The San Juan Portland Cement Co., which has been in the promotion stage for more than a year and now has completed plans, has been incorporated under the laws of California, with a capital stock of \$3,500,000.00, with \$7,000.00 subscribed by H. C. Stratton, P. C. Black, D. H. Fry and A. Raymond. Ground has been broken for a cement plant near San Juan, Cal., and machinery is being contracted for in the East. Brown, Wilson & Co., of New York and San Francisco, announce that the general construction contract has been awarded to F. G. Lathrop, of New York, who will arrive here in two weeks to begin work.

The Henry Cowell Lime and Cement Co., with its main office at 15 East Street, San Francisco, has closed a large contract with the Allis-Chalmers Co., for all of the cement machinery and electric motors required for a cement mill of large capacity, at Concord, Cal., forty-five miles north of San Francisco. The company has manufactured lime, only, in the past, but, owing to the great demand for cement caused by the rebuilding of San Francisco and the general prosperity on the Coast, it has been decided to begin the manufacture of cement within the present year, if possible. The electric equipment is to be built with starting torque features, for successfully operating cement machinery. There will be eighteen 50 h. p. heavy duty induction motors, twenty-three 75 h. p. motors, and one 150 h. p. motor. These will be operated by current taken from high tension electric transmission lines. Additional motors may also be purchased. Dr. Percy L. Hobbs, of Cleveland, Ohio, who has been visiting the Coast, was one of the engineers that recommended the purchase of this installation.

While it is possible that a cement war will take place when the product of the new mill is ready for the market, the fact that the present cement manufacturers in California are sold ahead largely may prevent serious cutting of prices on domestic cement, in the near future.

The Pembina Portland Cement Co., of Grand Forks, N. D., with mills located at McLean, N. D., is interested in the formation of a company to build a branch line of railroad from McLean to a connection with the Great Northern Railway. The mills themselves would furnish such a line a large amount of business, and the country through which the line would traverse would also afford a great deal of good business beside.

Quarries.

Screenings from the Crusher.

The name of the Illinois Crushed Stone Co., of Chicago, has been changed to the United States Paving and Improvement Co.

George Davis, of Blue Springs, Neb., has just installed what is said to be the largest stone crusher in that state.

A new crusher has been installed by the Nittany Lime and Stone Co., of Salona, Pa.

The Nyack Trap Rock Co., of Nyack, N. Y., has been incorporated with a capital of \$20,000.00 by T. Hofstotter, Alpine, N. J.; E. W. Hofstotter, and L. H. Lawrence, of Nyack.

The Rockport Stone Co., of Lima, O., has been incorporated with a capital stock of \$10,000.00 by John H. Keller, Franklin R. Mason, William Klinger, H. F. Sullivan and J. H. Secrest.

The town of Troy, N. H., has made an appropriation of \$1,800.00 for the purchase of a stone crusher.

The Mansfield Mineral Co., of Nashville, Tenn., has been incorporated with a capital stock of \$10,000.00 by W. J. Whitthorne, A. S. Williams, P. A. Shelton, T. O. Morris, George W. Wadley and West H. Morton, for the purpose of developing about twenty acres of limestone rock.

William Corrie, formerly superintendent of the West Stone Co.'s quarries at Joliet, Ill., has been made superintendent of the Lehigh Quarry Co., of Kankakee, Ill. The biggest business in the history of the company is expected.

The United States Granite Pressed Brick Co., of Los Angeles, Cal., is erecting a crushing plant that will have a capacity of 500 tons of crushed rock a day.

With the proceeds of the \$50,000.00 of preferred stock issued by the Woodruff & Pausch Stone Co., of Columbus, Ohio, improvements will be made in the company's quarries. The new issue will increase the capitalization of the company to \$180,000.00.

The Ft. Madison and Appanoose Stone Co., of Ft. Madison, Ia., have purchased the quarry outfit of Lantry & Sharp, at Pontoosuc, Ill., and are moving their equipment to the dolomite quarry at East Ft. Madison, Ill.

The Church Quarry and Mining Co., of Norfolk, Va., has been recently incorporated and permanently organized by the election of E. W. Church, president and George H. Frey, secretary and treasurer. The principal offices of the company will be in Norfolk. This company has acquired an extensive limestone quarry by long term lease on the Chesapeake and Ohio Railway near Clifton Forge, Va. They will put in a crushing outfit for ballast and fluxing as well as kilns for burning lime.

Iowa Quarrymen Organize.

Not to be behind the times or to let their fellows of the trade in other states get ahead of them, quarrymen of Iowa have formed the Iowa State Quarrymen's Association, and have adopted a constitution and by-laws setting forth the purpose of the organization. The following are the officers:

President—J. W. Boroughs, Marshalltown.

Vice President—W. N. Dearborn, Stone City.

Secretary-Treasurer—Frank Ericson, Cedar Rapids.

Thirteen of the largest quarries of the state were represented at the meeting, which was held at Sioux City during the month of February. A resolution was adopted by the quarrymen favoring a reciprocal demurrage bill.

The Quarryman's Harvest Time.

This is the season of the year when the crusher operator is lining up the business which will keep his plant and business organization engaged almost the entire season. There are the lettings of the county commissioners to be attended. The township and the municipal officers are giving out their work, and everyone feels that it is up to him to get as many miles of road contracts as possible in order to have plenty to do. In the scramble of getting enough business, let us remember the disappointments of the past, and carefully look over the ground before underbidding a competitor who may be better informed as to the difficulties of hauling and the lay of the land through which the road is to be constructed. There is plenty of work to go around, a great deal more than will be done this year. There is no use for a quarryman to try to see how cheaply he can take a contract when the feeling should rather be, "How much can I secure for the material and labor on this job to satisfy the inspector and still leave a wholesome profit after the work is all completed."

There is no doubt that a great deal of the road work constructed in the past has been done entirely too cheaply. There is no sense of the quarryman working for glory. The plant is deteriorating rapidly as the natural consequence of its operation. As the quarry gets deeper year after year it costs more money to elevate the stone. The cost of fuel, transportation and labor are constantly increasing and the price at which work is taken each year must be higher than what it has been in the past to meet this new order of things.

There was a time, and not long ago either, when every farmer thought he knew something about road building, and still there are people in every community who are unwilling to recognize the business of the road contractor as one of the newly developed industries of modern times. The heavy investment of the modern crusher plant and the enormous incidental expense of conducting such business is not even yet seriously regarded in some communities. They do not understand the economies of crushing rock upon a large scale, and think that the township could put in a little horse power crusher and get the stone from the roadside to build roads more cheaply than the contractor, who is actually taking the business at less than half the money that such local attempts could hope to accomplish. This makes every farmer along the line a critic, and when the inspector comes along the critics are careful to show him every place where an extra ton of stone could be placed inside the boards and in this way lots of extra stone has to be put on the road at the expense of the contractor. Costs of this kind must be provided for in the making of prices. Good roads are a positive asset to the owners of the land, and the only way to get them is to pay the man who has the equipment and the organization to make them well and to make them economically.

It will take the contractor just as long to build a mile of road that he has taken too cheaply as it will to build another mile where he is making a fair profit. If somebody is going to underbid your price, just let him have the work. It will be the best way to teach this kind of competition a lesson. While he is busy making nothing you can be getting your price elsewhere and get some profit for your investment and some pay for your effort.

The Man With the Message.

On this page we show a portrait of Ben B. Wickham, of Norwalk, O., who is now visiting the quarrymen in the interest of the Ohio State Stone Club for the purpose of spreading the gospel of co-operation and associated efforts. A great movement has been begun for the benefit of the quarry interests in Ohio and no man engaged in this business can afford to miss the opportunity of hearing the message which Mr. Wickham brings. At a recent meeting of the stone crushing and road contracting interests of the state held at Toledo and reported elsewhere in this paper, it was resolved to let every important stone crushing concern in the state know the situation as it actually is and ask for their co-operation. Speaking of the work which he has in hand, Mr. Wickham says:

"The crushed stone interests of Ohio are a house divided against itself. So divided no movement for the common good of this great industry in Ohio can be accomplished. Acting together with a common purpose and along organized and

definite lines much can be accomplished. There are matters pending of great moment to every quarry operator in the state, matters of legislation, of a common and just basis for the sale of stone by the ton, of adjustment of railroad rates and the provision of railroad facilities. All these matters the Ohio State Stone Club proposes to take up with a concerted and definite plan of action and the club needs the assistance and co-operation of every quarry operator in the state.

"A mere statement of this kind ought to make every quarryman sit up and take notice. A representative of this movement ought to receive a cordial and enthusiastic welcome for the sake of the cause he advances. The perfection of this organization is now being accomplished and the Ohio State Stone Club asks every quarry operator in the state, be he large or small, to put his shoulder to the wheel together with his fellows and push the good work on. Join the club at your first opportunity. Send in your application at once."



BEN B. WICKHAM, NORWALK, OHIO,
"THE MAN WITH THE MESSAGE."

Will Retire from Business.

J. W. Ruhl, of Covington, Miami county, O., writes that he has been operating a stone quarry for thirty-eight years, burning lime, manufacturing ground limestone for glass factories and getting out all kinds of building stone, and is now ready to quit business. He says: "I am getting old. My machinery is all out of date, and like myself about worn out. I intend to close out my business. I have taken Rock Products for several years and regard it the best paper published in the United States and doubt if it has its equal in the world."

"If the character of the sales indicates anything," said Sales Manager Moats, of the Austin Manufacturing Co., "the crushed stone industry is certainly in a most flourishing condition. We have never seen the time when there was such activity displayed during the winter months as has been the case during the past sixty days. We are loaded down with orders for crushing machinery." Among some of the concerns placing orders for crushers lately are:

Alsen American Portland Cement Works, No. 8 plant; American Lime Works, Spring City, Tenn., No. 3 crushing plant; Nast Bros. Lime and Stone Co., Marblehead, Wis., No. 5 crusher; Southern California Cement Co., Riverside, Cal., one No. 8 and two No. 4 crushers; Indiana Gravel Co., Attica, Ind., No. 5 crushing plant.

The Maryland Quarry Co., 403 Law Building, Baltimore, Md., has purchased about 124 acres of limestone land near Williamsport, Md., for development.

The Wilkens Avenue Quarry Co., of Baltimore, Md., has been incorporated with a capital stock of \$1,000.00 by John C. Leonard, George L. Evans, Robert W. Evans, Howard E. Crook and William W. Frush.

OHIO STONE CLUB MEETS.

First Anniversary Convention of Crusher Men is Held in City of Toledo.

BUSINESS-LIKE SESSIONS HELD.

The first anniversary convention of the Ohio State Stone Club was held in the National Union building, Toledo, O., February 28 and March 1, 1907. The invitations had been pretty generally distributed covering the stone crushing and road contracting interests of Ohio and about forty-five representatives of the leading concerns of the state participated in the meeting. This club is one of the most progressive and business-like organizations that it has ever been the pleasure of Rock Products to fraternize with. The troubles of the quarrymen were thoroughly discussed and there was much straightforward talk, all bearing upon the subject of the necessity for a radical improvement in the methods now in vogue in marketing the product of the crusher. Resolutions were passed with the co-operation of every member for the purpose of thoroughly organizing the quarry interests of the state, or at least giving every crusher man in Ohio a chance to hold up his head in his own interest by joining the club. There was a delightful banquet served at the Jefferson hotel on the evening of March 1, and it was highly enjoyed by all those who had attended the meeting. The harmony and good fellowship that prevailed throughout this convention could not be surpassed, and there was not a man there who did not realize that this was one of the occasions where all were banded together and standing together for the common good of all.

The reception committee consisted of John H. Crawford, C. W. Ryan, Charles Webster and J. L. Pray, but there was no formality about the matter and everybody, as he came in, helped the reception committee by getting acquainted as quickly as possible, for there seemed to be a feeling of "let's get down to business."

President F. K. Hogue, of the Flint Stone Co., called the meeting to order, and after a few remarks in which he extended his official greeting and congratulated all of the delegates present upon such a good representation, formally opened the meeting by reading his paper as follows:

PRESIDENT'S ADDRESS.

Gentlemen: I esteem it a rare privilege to have the opportunity of extending to this assemblage of representative business men, a word of welcome on the occasion of the first anniversary of the organization of the Ohio State Stone Club. As business men engaged in a great industry we find ourselves in close touch with all that pertains to the growth, the progress and development of our great state. More than 4,000,000 people are living today within the limits of our great commonwealth and our success depends primarily upon the market provided by the people of our own state. Therefore, while discussing ways and means for a more successful, economical and profitable conduct of our business, let us not forget our duty to our patrons and bear in mind that our ultimate and greatest success will be determined by the methods which characterize our operations.

At the basis of all true success there can be found the fundamental principles of honesty and integrity and this is just as true in business as in any other field of human endeavor. The acquisition of great wealth through the medium of unconscionable methods may attract attention to a man, but it will never win the admiration of his fellows or enable him to carry into old age a delightful and lovable spirit; but rather the sordid and diabolical spirit of the plunderer and the pirate. In the past history of our country we find that the happiest people in old age were those who had accumulated enough to be comfortable but who were not burdened with the cares of great wealth.

Let us all remember that the law of compensation occupies an important place in the operations of the business world and the activities of the human family; and this law operating upon the character of the foundation upon which the superstructure of any business institution is built, will determine the success and the recognition which is accorded it. Many instances have come within our own observation where a bright fellow has frittered away his

talents and genius on the altar of artifice, deception and cunning. But, gentlemen, I am pleased to say that I believe that there are none such among the strong, vigorous, virile men whom I have the pleasure of addressing today. In fact, since I have been connected with the stone business it has been apparent to me that the men engaged in the industry, in point of honesty, integrity and square dealing, are the peers of any class of business men in the state.

And entertaining this high regard for my associates here today, I can assure you that it affords me great pleasure to welcome you to our beautiful city on this occasion. While in the city it is our purpose to make you comfortable and happy, and also to give you some idea of the rapid strides that are being made by our beautiful and prosperous city. Gentleman, the city is yours to have and enjoy just as long as you see fit to remain with us, and if you so desire it, we will send the mayor and the chief of police out of the city for a few days. Again, gentlemen, I take great pleasure in welcoming you here.

Sol M. Wolf, of the Belview Stone Co., in response to the president's address, remarked that the club had done well in the year of its history because it is a start in the right direction. "I have had seven years' experience in the quarry business," said he, "and that is certainly time enough for a man to get a clear idea of just what he is up against. We are not getting enough money for our stone; none of us are. What we want to do is to get 75 cents a yard at the crusher. Something should come out of this organization, for there never was a business that needed a harmonious understanding between the operators like the stone business of Ohio. Everybody else in every line of business is getting paid for what he is doing except the stone man, and he ought to get paid for what he does. I think we ought to have an adjusting committee to work out some plan so that all the stone men working upon the same basis can decide upon the best measures for improving our methods of doing business. We ought to have every quarryman in the state in this club, for if all were members it would be an easy thing to promulgate our rules and regulations. We not only need a better price for our stone, but we must have a fair and equitable basis for the delivery of our goods. Crushed stone ought to be sold by the ton at the crusher. It is the only intelligent way of doing business, and as this is the basis of all railroad rates we'll have to come to it sooner or later, and the sooner the better. I want to see this club at this meeting accomplish something. I think it is up to us to make a decision and do something. I will try to do the best I can no matter what we decide to do."

Secretary S. M. Hall then read his report which he had prepared in the shape of a paper as follows:

REPORT OF SECRETARY.

Gentlemen: Words are inadequate to express the gratification I feel in being among you on this occasion of our first anniversary, to enjoy good cheer, to exchange business experience and to further cement friendships which began when this organization sprang like magic into existence. The history of our club is a brief but strenuous one, and requires but few sentences in which to review its origin, its early activity and its present prosperous condition. One year ago it came into being under influences of a stirring nature. There had been introduced into the Ohio legislature a bill simple, indefinite and with such an innocent exterior that members of the honorable body were deceived. The bill provided for a new standard for stone measurements, a change which was at once recognized as an imposition upon the quarrymen's business methods, yet despite this it passed the house with but little discussion.

A note of alarm was sounded by those who had correctly interpreted the character of the measure, and soon there was a small gathering, in the Southern at the capital, of men who were seeking ways and means to protect their interests. Organization was the cry to arms, and thus was evolved the Ohio State Stone Club. The result is well known to all of you. The cause was just, and, aided by the unity of action on the part of the producers, placed the iniquitous measure beyond the sphere of harm. It passed out of the senate as a story that is told.

The victory was an inspiration and an education, teaching as it did, that a community of interests is all powerful to combat encroachments on business privileges.

Hubbard has said that eternal vigilance is not only the price of virtue, but of every other good thing. With strong organization and vigilance, there are splendid possibilities for this club to raise the stone industry in Ohio to a high and successful standard.



F. K. HOQUE, TOLEDO, O., PRESIDENT OF OHIO STATE STONE CLUB.

W. J. Keever was down on the program for a paper, but he failed to appear, so President Hogue threw the meeting open for the free discussion of the subject, "The Advisability of Selling by Tonnage."

Sol M. Wolf, who always has something good to say, remarked: "I am in favor of selling stone by weight at the crusher everytime. We have our own scales. We put them in several years ago and the adoption of this plan of selling by weight has done away with a whole lot of trouble. Everybody here knows the bother and annoyance when you attempt to calculate the contents of every old wagon bed that comes up to the plant. We have taught the people of our locality that we weigh the stone at our plant and they now prefer it to measure. In fact, our scales work well."

George E. Mercer wanted to know if anybody had hired teamsters by the ton. He suggested that if the stone was sold by the ton and shipped by the ton it should be hauled by the ton.

C. L. Ireland (Clover Leaf Stone Co.): "Undoubtedly the only honest way to sell stone is by weight, but in all my experience as a quarryman and road contractor I have used road measure, because there seemed to be an insistence on the part of county commissioners and others to have the settlement in this way."



S. M. HALL, BUCYRUS, O., SECRETARY OF OHIO STATE STONE CLUB.

John H. Crawford, of the Toledo Glass Sand and Stone Co., remarked that he considered the equipment of scales as indispensable. All the product of his plant is sold by weight.

George E. Mercer: "I have built roads all my life and practically all of it was settled for by the basis of road measure, and I do not recall a single occasion where I ever got credit for as many yards of stone as was coming to me. The quarryman who crushes the stone and takes the contract to deliver it at the road gets the worst of it every time. The teamsters systematically shirk in the size of the loads and the inspectors almost invariably insist on more than is coming to them. I believe a system of selling by weights would be of great advantage."

S. M. Hall: "I have had experience to my sorrow with road measure; in fact, I think it is a sorrowful thing whenever a quarryman undertakes to deliver his stone in this way, and I would suggest that we adopt officially the ton method of selling our stone."

John H. Crawford: "I explained to the county commissioners several months ago most of the conditions that we have been talking about and took the trouble to show the fairness to both the buyer and seller where stone is sold by weight and I found that they take to it, and are perfectly satisfied to buy stone from us by weight."

S. M. Hall told of the systematic way in which the drivers "accidentally-on-purpose" spill the stone between the car and the wagon at the point of unloading, and this loss directly falls upon the quarryman because the inspector only credits him with the measurement actually delivered on the road.

C. W. Ryan, of the Ryan Stone Co., said there are more direct and indirect losses in the quarry crushing and road making business than any other line in the world. There is but one remedy: "We are certainly getting the worst of it," said he, "and everybody admits that. We must dictate the price as well as the method of selling our stone. There is nothing so cheap as stone. The teamsters, the inspectors, and everybody else connected with the sale and delivery of crushed stone treat it as if it was worth nothing. Before we can accomplish much we must have all the quarrymen with us. We must be absolutely just to all, and then we will have no difficulty in getting our rights. The strength of our position must be that we are demanding our rights, and nothing more than that. It is sure to succeed because everybody admits that we are entitled to conduct our business upon an equitable basis to both the buyer and seller."

Sol M. Wolf: "I don't want to take up too much time on the floor but nearly every speaker has suggested that what we most need is the actual co-operation of every quarryman in Ohio. Before the Ohio State Stone Club can effectually accomplish the purposes for which it is organized and which seem to be the unanimous opinion of this representative body, we must have the co-operation of every quarryman and crusher operator in the state. I would like to have this club send out an organizer who would make it his business to call at the various plants and explain to the quarrymen the objects and purposes of this club, and show them just how we propose to rearrange our methods so as to secure better conditions. Undoubtedly everybody will join this club when asked in this way, by the right kind of a representative."

S. M. Hall: "I heartily concur with what Mr. Wolf has said with regard to an organizer, and feel that it is to a great extent concurred in by most of the men here. I move that the chair appoint a committee of three to draw up a plan for strengthening the membership of the club to be submitted to the meeting tomorrow."

This motion was carried and President Hogue appointed on this committee Messrs. Hall, Wolf and Mercer. Continuing, the president remarked that in view of the experience that he and several of the other members of the club had had at Columbus about a year ago, when a bill was being considered by the legislature, which, if it had passed, would have put the quarrymen completely out of business, that it was no more than right for the crusher men, who are equally interested in preventing such a measure as the Wurtz bill from becoming a law, to be up and doing. He hoped that the committee would be able to provide a plan that would work out and secure the necessary membership. "This is not a case of whether we will or won't," said Mr. Hogue. "There is no choice about the matter at all. We must be either up and doing, looking after our interests all the time with our members at Co-

ROCK PRODUCTS.

lumbus continually on the watch tower to protect the stone interests by informing this organization of any action which is liable to come up for passage or be ready to get out of the stone business."

FRIDAY, MARCH 1.

The delegates assembled promptly and as soon as the convention was called to order they took up the discussion where it was broken off the day before. It was evident that after a night's rest they were more than ever in favor of assuming the necessary financial obligations to push the organization of the club, so as to secure as near as possible a complete list of the quarrymen of Ohio within its membership, and after nearly every delegate had spoken, declaring his position in the matter, it was decided to employ an official organizer to visit all of the quarrymen personally, to induce them to become members of the club by pointing out the necessities for such a club and the objects for which the club was organized. It was the unanimous sentiment of the meeting that nothing could be gained by the employment of a cheap man with insufficient intelligence to approach the quarrymen upon his own level. What the club wanted was a true representative of the intelligence and importance of the membership of the club as an exponent of its high principles. The club has taken a stand to achieve and secure equitable practice between the county commissioner, the engineer, the contractor, and the quarryman.

Sol M. Wolf said that he knew a gentleman of high attainments who was particularly fitted to undertake the missionary work of explaining the advantages of co-operation to the various quarrymen and thereby induce them to become members.

He suggested that to secure the services of such a man would mean to arrange for commensurate compensation for such services.

This idea met with general approval, and after a little discussion upon the subject, on motion President Hogue appointed a committee consisting of Messrs. Crawford, Wolf, and Mercer to interview B. B. Wickham with regard to undertaking the work. While the committee was busy the convention had an hour for lunch.

After lunch the delegates came together again and President Hogue announced that he hoped everybody had eaten heartily because he was going to hold the session with the consent of the delegates up to the time set for the banquet, which would be about 8 o'clock.

The report of the resolution committee was then introduced as follows:

TO SELL CRUSHED STONE BY THE TON.

WHEREAS, The method in vogue by common usage in the various localities of the State of Ohio for the measurement and computation of crushed stone has proven by experience to be misleading and susceptible of false conclusions and manipulations, leading to incorrect results, alike damaging both the producer and consumer; therefore, be it

Resolved, That it be the sense and expression of the Ohio State Stone Club that the only intelligent, equitable and business-like manner in which to dispose of our product is by weight, based on the standard ton of 2,000 pounds as a unit. Be it further

Resolved, That a change in existing conditions that will bring about this method will better the status of both producer and consumer. The accomplishment of this is worthy of a great effort, and the pledge of this organization to advise ways and means of accomplishment should be sufficient encouragement for every firm or individual in the State of Ohio, to become a member of this organization; therefore, be it further

Resolved, That the adoption of this resolution, at this time be in nature of a platform on which to conduct a vigorous campaign for the strengthening of our organization by an increase in membership that will only be limited by the number of firms or individuals that are eligible to membership.

Very respectfully,

S. M. HALL,
SOL. M. WOLF,
GEO. F. MERCER,

Committee.

Almost every delegate had a few commendatory remarks with regard to the resolutions, and it was suggested that the club use this document as the platform for its campaign of progress in securing better conditions and more business-like methods in the quarry business. It was the kind of enthusiasm that moves things, and means that the Ohio quar-

rymen have stepped out in front of the line to realize the new conditions of the business world up-to-date, so as to place their business upon a plane of intelligence that will command the respect and consideration of the public.

C. L. Ireland began the talk upon the subject of demurrage and said that the only remedy for demurrage charges that he ever found was to unload the stone.

Will Ryan got the floor and talked like William Jennings Bryan, saying that the crusher man is at the mercy of the railroad and that legislation is needed to protect them and regulate and equalize rates. A great many of his old friends were surprised at Will's oratorical display and N. R. France at the close of his remarks said that he was in favor of sending Will Ryan to the legislature to represent the quarrymen of Ohio.

Messrs. Wyant, Crawford, France and Pray all talked on the subject of demurrage and some of the remarks in which the speakers cited the incidents of their experience in these days of car shortage and demurrage charges were amusing. Nevertheless it is clear that the quarrymen are getting the worst of it nearly every time and the railroads don't seem to be anxious to handle the crusher product anyhow. They treat the business as if it were something they had to do, and as if they didn't expect to make any business appointment. Most of the gentlemen who spoke on the subject were of the opinion that some benefits at least would be secured by means of legislation.

At this time the committee reported and announced that it was their recommendation for the Ohio State

question of terminal facilities. Factories locate in the large cities because there they can secure labor to better advantage and more plentifully than in the country. The location of manufacturing industries means the centering of shipments of raw material and the outbound shipment of the manufactured product. This involves the delivery and interchange of cars from one railroad to another, causing delay in handling. It also makes it necessary for a great number of cars to be loaded and unloaded on a small and inadequate amount of track. The loads are therefore held back until those already placed on the manufacturer's siding are unloaded and the same cars reloaded for outbound shipments; in that way the service of the car is decreased just as many days as is held back by these conditions.

The railroads have not kept up with the times and increased their terminals in proportion to the increase of their business.

They have also failed to provide main tracks adequate enough to handle their trains. Where they should have double tracks they are operating on single tracks, and where they should have four tracks keeping their passenger and freight traffic separate, they are operating on two tracks, running limited passenger trains, and side tracking freight to give the public rapid transportation.

Mr. Harriman has made an estimate of the cost of sufficient track facilities to remedy these evils, and put the railroads in position to handle the business of the country at the present time. He says it will cost five billion, five hundred million dollars, and consume five years to accomplish the result, and then if the business increases as rapidly during the five years necessary to make this improvement, as it has during the past five years, the condition at the end of that time will not be much better than it is at the present time.

Car service, per diem, and embargoes, are but mere subterfuges and can not remedy the situation. The railroads must wake up and provide the proper facilities.

Five million to eight million bushels of grain on the track day after day in Chicago is no uncommon occurrence. As fast as the old cars are unloaded, new cars come in. Three thousand cars north of the Ohio River waiting to be transferred into cars for shipment south of the river, and three thousand cars standing on the south side of the river containing perishable freight, waiting to be transferred into cars north bound, was a recent occurrence. A grain company, with its elevator full, sixty cars on the track that the railroad would not allow the grain company to ship beyond its elevator, received three cars last week to relieve the situation.

These examples are given to show that the stone man is only one of many sufferers. What is the solution? What can we do as stone producers? The answer to these questions are both beyond the writer.

But there is a bright side to this question as well as the dark side we have pictured, and that is found in the statement made regarding the immense outlay in improvements, necessary for the railroads to make.

Millions of tons of stone will be used. Ballast and concrete will consume greater quantities of crushed stone than the producers' wildest fancies have ever pictured. It behooves us as an organization to work day and night for crushed stone, and advocate its superiority over all other material for railroad construction of all kinds.

An organization of this kind can do much towards relieving the car situation and aiding in the more rapid transportation of our material. That is just what we should do, and a committee consisting of men having experience along this line should be appointed to labor with the railroads in behalf of our fraternity.

This paper was well received and really amounted to an intelligent summing up of much of the discussion that had already taken place.

N. R. France, when called upon to make some remarks with regard to the prospects for business for 1907 said he would suggest that the greatest thing that was needed was a promoting committee to go around and call on the road people and make them wake up.

George E. Mercer was down on the program for a paper entitled "The Advantages of Co-operation." The substance of his remarks was as follows:

"I have no apology to make for not being as much of an orator as I would like to be; in truth I am only too glad to have this opportunity to bore my friends. As I understand it, co-operation means,



SOL. M. WOLF, VICE-PRESIDENT OF THE OHIO STATE STONE CLUB.

Stone Club to employ B. B. Wickham, of Norwalk, Ohio, to canvass the quarrymen of the state and to induce them to become members of the club, the matter of compensation being duly arranged. This report of the committee was unanimously concurred in.

On motion of C. L. Ireland the club voted to employ Mr. Wickham for one month, and to place the matter in the hands of the executive committee to use their discretion with regard to continuing his services for a further period.

On suggestion of President Hogue Mr. Wickham was invited in to the meeting and introduced to the members. He made a few appropriate remarks.

CAR SUPPLY AND TRANSPORTATION.

BY J. H. CRAWFORD.

The movement of cars is the most difficult problem that the railroads are compelled to solve. There are enough cars but the question is how can they be moved. Some of the railroad officials tell you that the solution of the problem lies in more motive power, and undoubtedly an increased number of engines would assist materially in solving the question. When we come to the great centers, we find that it is not a question of motive power, but is a

as applied to our business through the Ohio State Stone Club, that we as a body of men should link our interests together for the purpose of bettering our condition, mentally and financially. We are benefited in a social way because it gets us acquainted with each other and there is nothing of more benefit to the intelligent business man than personal contact with his neighbor.

"There is also great benefit to be derived in a business way, because no man could help accumulating knowledge from others who are also running a stone quarry and have similar experiences to that which we meet every day in the ordinary course of our business. We have been here discussing matters of common interest to all of us, and we have brought out the best way of doing things. We have become acquainted with the best information in existence on certain subjects of vital interest to our success. Every man here should be willing to tell all he knows for the benefit of others in our club, in exchange for what they can do in return in the way of suggestions and experiences. I take it as one of our duties as members of this club for us to inform fellow members of any business that we may learn of that we can not handle ourselves.

"Not the least among the advantages of co-operation in an organization of this kind is the privilege of banding together for the purpose of taking concerted action to prevent the legislature of our state from inadvertently making bills that will affect our business directly or indirectly to make us losses through no fault of our own. At the same time it places us in a position to suggest and introduce legislation that will protect, build up and assist our cause.

"In this way we will be able to get better rates as well as better service from the various railroad companies. The county and township officers will soon learn to respect us, and their engineers will feel that any arbitrary rule against one of our members will be taken up and defended.

"Let us request and encourage all of our members to keep an accurate account of the different jobs for which they furnish stone so as to determine exactly what it costs to produce a yard of stone and all other costs incidental to the conduct of the business. We all must admit that we have been careless in this regard and there is nothing of more importance to us than to arrive at a more accurate determination of the exact cost of doing business, for it is one of the indispensable secrets of success in these times, as it keeps us right up against the raw edge of reality.

"By means of co-operation we are enabled to weed out some of the objectionable features of our business in order to give us a better market and a better price for stone. We will also find a way of getting our money with less trouble after it has been earned. Every one here is aware that a large company is in a position to collect with less effort on a road contract than can any individual.

"The result of co-operation along the lines suggested means to the quarryman that at the end of the season all his debts will be paid, he will have money in the bank, he will be a good fellow, and he will be loved and respected by the church that receives his donations. Now isn't that a lovely picture? (Applause.)

"The worst is yet to come. How shall we accomplish this end and hold everybody in line? Selfishness, greed and mistrust will try to get the better of us, and if we allow any of these evils to get into our midst it will destroy the very object which we are striving to attain.

"We must all keep our consciences clear from such contamination and look to the Ohio State Stone Club, of which we are all a part, as the beacon light to guide our endeavors. When we go to Columbus to make ourselves felt think of the results that can and will be accomplished if we all work together. If we keep the principal purposes of this organization always in view with all its advantages we are sure to win.

"We have started all right. I hope and feel that each gentleman here today fully realizes that there is work to be done, and in order to accomplish anything it is necessary for all to give their hearty support to a common leader for obtaining the best results, and that is what the word co-operation really means."

President Hogue called on each of the delegates in rotation to say something upon the subject of co-operation, and with one accord each one announced his intention of giving his hearty personal assistance to the good work.

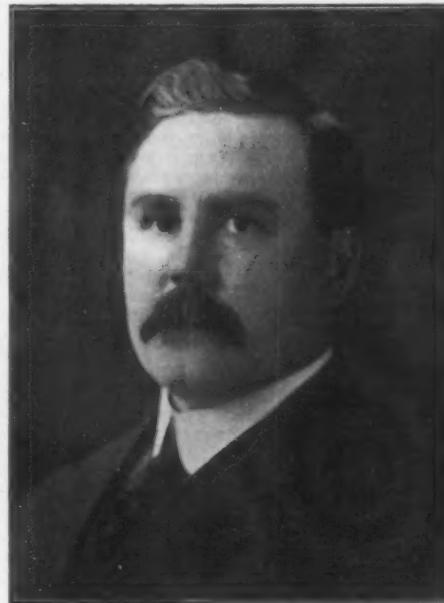
On motion the president appointed the legislative committee of five, of which the president and sec-

retary, are members ex officio, with alternates, so as to have a full committee continually. The members of the committee are: Messrs. Wolf, C. W. Ryan, Ireland, Keever, France, Crawford, Loy, Mercer and Schneider.

There was considerable talk upon the subject of improved equipment and the cost of production of stone, in which nearly every delegate participated. The representatives of the crushing machinery concerns who were not present must have had a burning in the ear. Every kind of equipment was discussed, and every kind of outfit for the quarry, for rehandling or moving stone was taken into consideration and criticised. The discussion went to show that the quarryman is wide awake to every possible improvement, and is constantly looking for economies to secure better service.

The word powder was not mentioned because two powder representatives were present, P. N. Dennison to defend the name of Dupont, whose powder had defended the whole nation so many times; and Burton, of Pittsburg, who does some shooting himself when occasion calls for it.

A rising vote of thanks was tendered to President Hogue for the accommodations provided for the convention and his untiring efforts in behalf of the association. A like compliment was tendered to Secretary Hall for his untiring efforts. Rock Products received the same kind of a glad hand, with the cordial recommendation of the association that every quarryman in Ohio be urged to become a subscriber.



J. H. CRAWFORD, SECRETARY AND GENERAL MANAGER OF TOLEDO STONE AND GLASS SAND CO., TOLEDO, OHIO.

The next order of business was the election of officers, which resulted as follows:

President—F. K. Hogue.

Vice Presidents—George E. Mercer, J. H. Crawford, C. L. Ireland, Sol M. Wolf.

Secretary-Treasurer—S. M. Hall.

Executive Committee—N. R. France, C. W. Ryan, W. H. Loy, T. E. Wyant, J. O. Carr, A. J. Schneider, M. P. Goetschius, W. J. Keever, Charles Webster.

The president, the secretary and a number of the other officers made graceful little speeches in acknowledgment of the high compliment of the unanimity of the election and the convention adjourned, sine die.

THE ATTENDANCE.

- T. A. Beeghly, The France Co., Bloomville.
- W. E. Bliss, The France Co., Bloomville.
- M. H. Barmay, Bowling Green.
- J. S. Burton, Burton Powder Co., Pittsburgh, Pa.
- F. Bordner, Bordner Stone Co., Portage.
- J. O. Carr, Bordner Stone Co., Portage.
- W. H. Cook, E. H. Ekert, Toledo.
- J. H. Crawford, Toledo Glass Sand and Stone Co., Toledo.
- P. N. Dennison, DuPont Powder Co., Cincinnati.
- N. Davis, Ida, Mich.
- J. H. Dwyer, Marion.
- N. R. France, The France Co., Bloomville.

M. P. Goetschius, Ottawa.

F. K. Hogue, Flint Stone Co., Toledo.

S. M. Hall, Brokensword Stone Co., Bucyrus.

A. J. Hatch, Sylvania Stone Co., Sylvania.

Mr. Hamilton, Marion.

C. L. Ireland, Erie Stone Co., Van Wert.

Fred K. Irvine, Rock Products, Louisville, Ky.

W. H. Kilcawley, The France Co., Bloomville.

W. H. Loy, Hancock Stone Co., Findlay.

J. A. McCall, Tarbox & McCall, Findlay.

Geo. E. Mercer, Mercer Stone Co., Bowling Green.

Geo. G. Metzger, Flint Stone Co., Toledo.

I. P. McAfee, Flint Stone Co., Toledo.

C. W. McKee, Erie Stone Co., Huntington, Ind.

E. T. Paul, Bluffton.

F. J. Pogue, Hancock Stone Co., Findlay.

J. L. Pray, Holland Stone Co., Holland.

C. W. Ryan, Ryan Stone Co., Maumee, Castalia, N. Baltimore.

John Ryan, Whitehouse.

Frank Roach, Flint Stone Co., Waterville.

R. C. Roach, Ryan Stone Co., Waterville.

John Schlatter, Toledo.

A. J. Schneider, Moores Lime Co., Springfield.

C. G. Spencer, The National Sand and Limestone Co., Carey.

J. B. Shafer, Hancock Stone Co., Findlay.

B. B. Wickham, Norwalk.

Sol M. Wolf, Bellevue Stone Co., Bellevue.

T. E. Wyant, Bellevue Stone Co., Bellevue.

Chas. Webster, Sylvania Stone Co., Sylvania.

THE BANQUET.

It was after 8 o'clock when a procession was formed headed by President F. K. Hogue and the club marched in a body to Jefferson Hotel, where a sumptuous banquet was spread by the local stone men of Toledo.

It was an occasion long to be remembered. There was a Lucas county turkey, a delightful punch, and not a member of the menu from "oyster cocktail" to "black coffee" was missed. It was all served up in the most delicious manner by saucy, bright eyed waiter girls, who drilled like soldiers, and stood for all the chaffing that the merry party couldn't help from throwing out.

J. H. Crawford was the toastmaster, and he was a good one too, for he had something witty to say every time it was his move.

Sol Wolf made a graceful little speech upon the subject of "Association." There is no better association man in the world than Sol, and he can't remember any occasion in his life when he didn't have something to say. Now this is not supposed to be a slam, because he never opens his mouth but that he says something that is worth while. He is one of the wheel horses of the Ohio State Stone Club, and whenever there is anything to be done he is right in the front rank with conviction and determination.

President Hogue did some talking too, so did N. R. France and C. L. Ireland. As was said before the toastmaster is a "peach" and just kept enough formality about the board to make everybody feel at home and comfortable.

The speaker of the evening, John Schlatter, delivered quite an epic upon the subject of "Ohio." Incidentally he threw a pretty bouquet at President Hogue, and his whole speech sparkled with gems of historical illusion and poetic sentiment.

B. B. Wickham told a funny story and mixed up a little history into it that tasted well. John L. Pray made a nice talk and C. W. Ryan, in his own inimitable style, exhorted the members of the club to stick together and accomplish the purposes of the resolutions that had just been adopted.

S. M. Hall had a few graceful remarks, and they honored the representative of Rock Products by calling on him for the "Opinion of the Press." Dr. Sam Johnson once said, "I have dined heartily; therefore I can praise God without any mental reservation." Perhaps this same sentiment gave some color to the opinion of the press as uttered there.

It was long past the hour of midnight when the merry party broke up. It was a most harmonious gathering of business men, enjoying a little social session after having adopted and put into motion progressive measures for the advancement of their own interests and the benefit of the stone trade as a whole. Everyone was glad to be there and departed with the feeling that he had done all in his power to help along the good cause.

ROCK PRODUCTS.

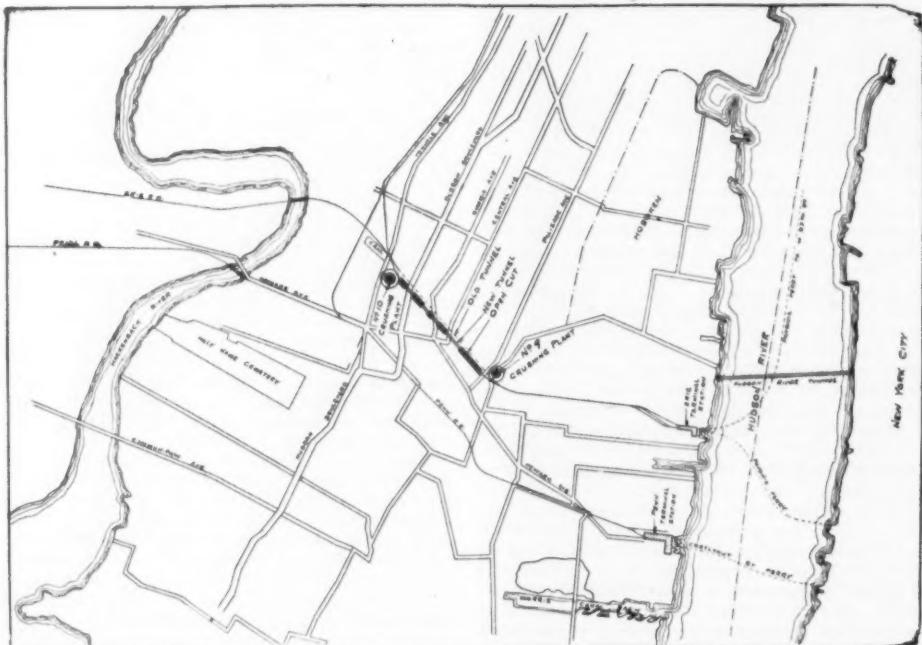
A Mammoth Railway Ballast Plant.

What is said to be the largest rock crushing plant ever constructed for the preparation of ballast for railway purposes, is one that is now being erected by the Millard Construction Co., of Philadelphia, in connection with the opening of a four-track "cut" through what is known as Bergen Hill in Jersey City, N. J., for the Erie Railway Co. This cut is to be used for both freight and passenger traffic, but the old tunnel is not to be disturbed and will be used for freight traffic in the future. The total length of the "cut" will be in the neighborhood of 4,000 feet, and practically the entire distance will be through solid trap rock, and will necessitate the removal of about 500,000 cubic yards of rock, which must all be crushed to 2 inch size for ballast and is to be stored on the Erie Co.'s ground for use as occasion demands.

The contract between the Millard Construction Co. and the Erie includes the completion of the four-track railroad through this "cut" as well as the building of bridges where streets are crossed, with the exception of three of the principal streets, which are to be tunneled. The entire work must be completed within twenty-two months from the signing of the contract, and owing to delays which are common to work of this kind, and the fact that the cut is to be turned over to the railway company ready for the passage of trains within the specified time, the work of excavating and crushing the rock must be done in approximately fifteen months, which will no doubt be reduced to perhaps twelve months, because of stormy weather and other causes of delay. For this reason the crushing of the rock becomes a big problem and necessitates the installation of what is without doubt the largest rock crushing plant, taking the entire installation into account, that has ever been erected at one time.

The "cut" will reach a maximum depth of approximately 60 feet, but owing to its being part open and part tunnel, the Millard Construction Co. has decided to use cable ways for spanning the work. At the eastern end there will be an open cut of about 1,200 feet in length, over which there will be stretched two cable ways, each 1,300 feet long. Over the balance of the work will be stretched five of the same kind of cable ways, stretched across and moved lengthwise of the cut as the work progresses. The two longer cable ways dump the rock onto the apron, from which it will be spouted directly to the No. 9 McCully crusher at the eastern plant. The shorter cable ways will dump the cars which will be hauled by small locomotives to the No. 10 crushing plant at the western end. The eastern plant will consist of one No. 9 and two No. 6 McCully crushers, together with elevator and screen arranged to spout the rejections back to the No. 6 crushers. The screenings will be spouted into a hopper, from which the stone will be fed onto a 30 inch belt conveyor, which will convey the stone over the meadows at the foot of the hill. Upon these meadows it is the intention to store the crushed rock which comes from the eastern end of the cut. The crushing plant will be at such a height that by carrying the conveyor on practically a level grade a height of about seven feet will be attained above the meadows, at the edge of which a tower will be built, from the top of which the stone will be dumped from the end of the belt conveyor until a pile approximately seventy-five feet in height has been obtained. Upon this pile will be built a movable distributor carrying a swinging boom, upon which will be mounted a 30-foot belt conveyor. A second belt conveyor will be installed at this tower for receiving the stone from the first conveyor and discharging on the distributor. The distributor will enable the stone to be piled over an area of 120 feet wide at the top of the pile. As the pile is built this distributor will be moved forward and the second conveyor extended accordingly.

At the western plant will be installed one No. 10 and four No. 6 McCully crushers, together with two screens and an elevator, the screens being arranged to spout the rejections directly back to the No. 6 crushers. The stone from this plant will be distributed in the same manner as at the eastern plant, the only difference being that the height must be attained by running the conveyors up an incline. In this case the pile will start at a height of 75 feet, and owing to the shape of the ground upon which the stone must be piled and the fact that this is no more than large enough to contain the stone piled upon it, the distributor will be gradually elevated as it is pushed ahead and the conveyor corresponding to the second one of the eastern plant will be carried on an ascend-



MAP SHOWING THE LOCATION OF THE LARGE CRUSHING PLANTS AT JERSEY CITY, N. J.

ing grade. In this way a height of about thirty feet additional for each 100 feet of horizontal run can be obtained without difficulty.

The dust from the broken stone will be screened out and stored temporarily in pockets underneath the screens, from which place it will be intermittently spouted to the belt conveyors, and stacked in a separate pile.

The accompanying map covering a portion of Jersey City shows the location of the No. 9 and No. 10 crushing plants, and will give some idea of the magnitude of the work to be accomplished within the short time allowed under the contract.

All of the machinery for this mammoth crushing plant, which includes the crushers, conveyors, screens, power plant, etc., will be furnished by the Power and Mining Machinery Co., of Milwaukee, who have had extensive experience in the building of rock crushing plants of every description. All work in connection with the contract will be carried out under the direction of J. H. Loucheim, general manager of the Millard Construction Co., who will be assisted by the engineering staff of the Milwaukee concern, under Chief Engineer Henry Delapaine.

National Organization Needed.

While in Chicago the other day there was a little conference between a number of crushed stone men who realized the necessity for more intelligent cooperation in outlining new markets and planning for the greater use of crushed stone. Of the number was F. K. Hogue, of Toledo, O., who is manager of the Flint Stone Co. Mr. Hogue has learned well the necessity for getting closer together with the competitor not only from the promotion standpoint, but also to exchange ideas for cheapening costs and improving the operations in the quarry. That is why he came to Chicago. He said: "I wanted to meet the man from Iowa, Missouri, Indiana and Kentucky because I realized I have some things I can tell him and I hope he will come and tell us some of the things he knows. We ought to have a good national crushed stone association that would be a delegate body and it would be the best thing in the world if we could get every crushed stone man to come and spend a week together during the month of February, but we can not do that. We found from experience in Ohio where only a few of us can get together, that it was the means of protecting ourselves against hostile legislation and of getting information that made our profit accounts look better, and if we did those things it seems to me we have accomplished a great deal."

Another quarryman who felt the same way was Hale Roberts, formerly of Racine, now operating a quarry in Iowa Falls, Ia. Mr. Roberts said: "I always do get benefit from the exchange of ideas and I learned much through my experience in selling crushing machinery everywhere. Of course I knew many of the crushed stone men and I have learned

many a good thing from them and I believe I have suggested things to them that have been to their interest. It seems that this year is going to be successful to the crushed stone man with the enlarged business from the concrete industry, the improvement of roads everywhere, and railroad improvements, and the possibilities are greater for the industry if we will only take advantage of the opportunities."

We met T. C. Schwier, of E. M. Baltes & Co., Fort Wayne, Ind., who came to Chicago to make some contracts and for a visit with some of his personal friends. He dropped in at the meeting to see what might be done towards outlining a national crushed stone association. He reasoned that he had been benefited by visiting with his competitors in the crushed stone lines, and his only hope was that the time would come soon when all crushed stone men would meet often and exchange ideas about the latest thing in mechanical appliances and experiences about some new wrinkle that each man used in operating his quarry.

Oklahoma Portland Cement Co.

The Oklahoma Portland Cement Co., of Ada, I. T., has been organized and has begun the erection of a plant at that place. A. L. Beck is president; C. C. Bishop, treasurer of the Marblehead Lime Co., of Chicago, is vice president; James M. Wintersmith, formerly with J. B. Speed & Co., Louisville, Ky., is secretary and William L. Whitaker, formerly superintendent of the Lehigh plants at Mitchell, Ind., is the manager. Others interested in the plant are: A. T. Howe, president of the Marblehead Lime Co. of Chicago; George L. Kice, secretary of the Mitchell Lime Co., of Mitchell, Ind., and Peter Martin, president of the Ohio and Western Lime Co., Huntington, Ind. The company has land on which there is fine material and the officers say they will have the most complete 2,000 barrel plant in the country. They already have fifty cars of material on the ground and have fifty more cars loaded and on the way.

The Wisconsin Portland Cement Co. will shortly break ground for their mill at Portage, Wis., which is to cost \$400,000.00. The plant is to be electrically equipped, the power being supplied from the Kilbourn Dam on the Wisconsin river. The plant was designed by D. C. Jackson, of Madison, Wis. The stock in the company is owned by dealers in the state. They will manufacture the Badger Brand.

The Interstate Cement Co., of Colorado Springs, Col., has been incorporated for \$1,000,000.00. The company will begin plans for a plant in the near future.

A number of Butte, Mont., capitalists have organized the Butte Portland Cement Co., and incorporated the company for \$2,400,000.00. They expect to build a large plant.

Lime.

The National Lime Manufacturers' Association.

Meets Semi-Annually

Peter Martin, Huntington, Ind.	President
A. A. Stevens, Tyrone, Pa.	First Vice President
W. B. Carson, Riverton, Va.	Second Vice President
T. H. Fleischer, Sheboygan, Wis.	Third Vice President
C. W. S. Cobb, St. Louis, Mo.	Treasurer
E. M. Defebaugh, Louisville, Ky.	Secretary

Official Organ, ROCK PRODUCTS.

Hydrated Lime.

(A paper prepared by Peter Martin and read by George W. Christian, Jr., at the annual convention of the Ohio Builders' Supply Association in Columbus, O., March, 1907.)

Mr. Chairman and Gentlemen: At the request of my friend, Mr. F. Lawson Moores, I have prepared a short paper on hydrated lime. It seems to me that some one else should have been selected to prepare this paper and present the subject to this intelligent body, as there are those among you who are better posted on the subject than myself and who have more time at their disposal for the preparation of a paper treating of so important a subject. However, I am not one to shirk any duty and if I am able to do something to advance the interests of the association I am willing to contribute my share.

In the early history of the lime business, lime was manufactured in this country by many people who simply put on a pile of wood and set it afire, letting it burn. This, of course, produced too much waste and the lime and stone were all mixed through each other and it was necessary to separate the lime from the stone. The quality of the lime was also not satisfactory. Later on they built what was known as a pot kiln. This was not a continuous kiln, but a kiln built and filled with stone with one arch and they fired it with wood. It took about forty-eight hours to burn it, then the kiln was emptied, refilled and fired again, and so on. It produced about 1,000 bushels in forty-eight hours. When lime was burned this way the manufacturers got from 22 to 28 cents per bushel for it f. o. b. the kilns. Later on they erected the patent kiln, which is known as the continuous kiln. This kiln is filled every day, the lime being taken therefrom every four hours, thrown on the floor, cooled and loaded in cars, either in barrel or bulk as desired by the customer. These kilns are now in use nearly everywhere. They are fired with coal, wood, gas, oil, or whatever may be the most profitable and cheapest fuel for burning these kilns.

Lime in its lump state should be carefully slaked and the slaking should not be done blindly. It is essential that the lime should be slaked properly. The way to slake lime is to put it in a mortar box, cover it with water and let it stand without stirring with a hoe until the slaking is complete. In this way the lime will slake up nice and clean and will make a richer putty, as it will retain the steam and fatty substance more than if it is stirred with a hoe and allowed to escape. Many slakers pay no attention to it. They simply put the lime in a box and pour on the water and keep stirring with a hoe. In consequence of which, they produce a lot of waste. When lime begins to fall it falls in little blocks and they roll these blocks in the creamy lime that is already slacked, sealing them so the water can not get to them. In consequence they throw out these little blocks and call it waste, when in two or three days after they are thrown out they will all slack. Hence, you can see how necessary it is to see that lime is properly slaked. Oftentimes lime is blamed and condemned when it is really the fault of the slaker and not the fault of the lime.

Now, in reference to hydrated lime, it is necessary at the outset to have a clear and distinct knowledge of what hydrated lime really is. Hydrated lime can be made only in certain localities, as it takes a certain kind of stone to make a good product of hydrated lime. Magnesia stone is preferable, but not

all magnesia stone will make this lime. I know of but a few places only where they are able to make the right quality of hydrated lime.

Hydrated lime is made from freshly burned lime, which is first crushed, then slaked and cooled. As a rule it is slaked in either a Clyde slaker, cylinder slaker or a little tub slaker. At our works in Huntington we are using a cylinder in which to slake it. This is a continuous slaker and our hydrated lime retains all its strength, fatty substances, adhesive qualities and so on. In consequence, we get the same results from our hydrated lime that we would get from lump lime by the old process of slaking. We have recently installed a new slaker in our hydrating mill and the production therefrom is A No. 1.

Hydrated lime is an article that is coming into the market very rapidly, although in this country its use is in its infancy. This is not the case in foreign countries, for it has been used for centuries in Russia, England, Germany and many other foreign countries. The buildings erected by the use of this product are very fine and are much better than those of countries where lime is slaked and immediately used. Hence, we need have no fear of advocating the extensive use of hydrated lime, as its superior qualities and advantages are well established even though it is a new product in this land.

So much can be said of hydrated lime and its use that it is almost impossible for me to describe within the limits of this paper the virtues of the same. I can only give a few particulars, for to give an exhaustive description of the subject would require more time than we have at our disposal. The fact is that it can be used for any purpose that any other lime is used, and with greater and more satisfaction. Its greatest use, however, is in the erection of buildings. It can be used to a good advantage for all work done in a building where any lime is used. In brick work, stone work, plastering and everything pertaining thereto, it is especially valuable. It gives a greater tensile strength than ordinary lump lime, as it mixes more evenly with the sand used. Good quartz sand and hydrated lime will make the best mortar for ordinary brick work that is made today. A smoother, and closer joint can be made and its adhesive quality to brick is about the same as cement. For brown mortar, plastering and so forth, it is much superior to lump lime. For white coating it is especially adapted as it works smoothly and readily under trowel and makes a harder and glossier finish. In the manufacture of hard wall plaster, hydrated lime plays an important part. Owing to the perfect hydration of the material and the ease with which it can be handled, it should be possible to give a more beautiful finish than any other material. A proper study of the mixtures to be used, should develop a plaster whose set can be accurately predicted and one which would work well either in moist or dry weather. An advantage of such a plaster would be that it would not set quickly as the gypsum products and would work more smoothly under the trowel, thus making a more uniform and dense surface.

Hydrated lime can also be used to a great advantage in various kinds of cement work. An objection has been made by brick layers to the laying of brick in cement mortar because of a difficulty of handling same with the trowel. This difficulty has been overcome without any detriment whatever to the work by the use of a comparatively small proportion of hydrated lime. It makes the mortar work smoothly under the trowel and thus increases the number of bricks that can be laid per man, and it makes a more durable job and one that resists moisture. The trouble heretofore experienced in making waterproof walls of concrete is almost entirely overcome by the use of hydrated lime. In the past we have had to resort to the covering of concrete cellar and curbed walls with tar and asphalts in order to make them waterproof. From recent experiments, it has been found that when perfectly dry hydrated lime and cement is mixed and then the aggregates applied an almost perfect waterproof wall is produced. Recently a gas manufacturer erected a tank built of cement and sand alone. He filled the tank for a month and the water all leaked out. Then he went to work and put a new lining inside about 8 inches thick all around, including the bottom, using one part lime, two parts cement and three parts sand, and in this way his tank was a success. If a well proportioned mixture of hydrated lime, cement and sand be used for plastering on stone or brick walls, they will be rendered water proof.

In the manufacture of cement blocks for building purposes, if hydrated lime is used with the concrete, the moisture-resisting properties of the blocks are

greatly improved and at the same time a lighter shade in the finished product is produced. For this reason it is being used very extensively in this line of work.

In the manufacture of sand-lime brick, hydrated lime is an indispensable factor. This industry was first developed and brought to perfection in Germany, but now there are sand-lime brick factories springing up all over the country. As the industry becomes more completely developed and the product improved these brick will be more extensively used because they can be made to produce a more slight appearance in a building and a greater architectural adaptation than the common red brick made of clay. This industry will create a very extensive demand for hydrated lime. As the manufacturers become more skilled in the production of these brick, they are bound to come into greater use by builders, and I have no doubt will soon largely supersede the clay brick.

In these few remarks, I have attempted to give an idea of the importance of hydrated lime. As I say above, I have not the time to say all that can be said on this subject. The field is so extensive that volumes might be written without exhausting the subject. I have endeavored to call your attention to a few of the advantages of this product with the hope of interesting some of you in the great possibilities it affords. It seems to me that every dealer in lime should investigate the matter as I am now convinced that it would be to his interest to do so. Every dealer should prefer to handle it as there is no waste nor loss from deterioration. It is non-perishable. It is just as good if used in a year from date as it is if used immediately. It does not deteriorate or lose its strength with age. It is easily handled as it is shipped in paper or burlap sacks, and does not require so much room for storage as does lump lime. I am sure that when once intelligently used, it will supersede all other forms of lime in building operations. The sales and shipments from our plant are increasing daily, and all who use the product are pleased with the results.

Now, gentlemen, I hope that what I have said on this subject will cause those of you who have not done so, to investigate the subject thoroughly and when you have done so, I am sure you will find that it will be to your advantage to advocate the more general use of hydrated lime. If this should result, my work in preparing this brief paper will not have been in vain and the lime industry will make greater advance in the future.

Practical Lime Making.

Of late years there has been a lot of theory in connection with the lime business and there is a possibility of a great deal more theorizing, but there is a greater necessity for the practical working out of the real problems of the business. As an instance, the fuel problem is one in which all are interested because it costs money to burn coal or wood and few plants are in position to use natural gas. The gas producer is being practically used, reducing the cost of the fuel, besides getting greater efficiency in utilizing the waste gases. But fuel is not the only chance for leaks around the lime kiln.

In the methods of handling stone from the time it is first blasted until it is turned into lime, there seems to be considerable difference in costs. While we look for some differences, owing to the character of the stone and its location, labor costs and other features, there is evidence to ROCK PRODUCTS that some of the lime men are keeping close tab on what it really is costing and others are just guessing at it. That being the case it will be well for you, Mr. Lime Man, to compare notes with your neighbor on this proposition. But the biggest hole yet, where leakage comes out in quantity is in the sales department. It is hard to get manufacturers to realize that they have not a fence around the earth and can not control both their customers and their competitors and everybody else on the basis that their rights are paramount to every other person's, and the result is there is practically no uniformity in lime except in some special centers where well-organized effort has put the business out on a profitable basis.

Then there is another leakage that many of us would not count, but we are reminded of it from a lime man's statement the other day. He said he had lost money last year and he was asked to explain. He said he had not made as much as he did in 1905, by \$30,000.00. This is true of many manufacturers who depend on the business that just comes to them and make no effort to create business. They are losing money that they could have next year in the surplus account if they did more creating and thus again you will be sticking your pants in another hole in the window.

ROCK PRODUCTS.

Completes Burning of Kiln.

BUCKRUS, O., March 15.—The Brokensword Stone Co., of this city, has just completed the burning of a large kiln of lime, the stone for which was taken from their quarry. The lime produced is of a superior quality and the company now proposes to hydrate a portion of this product with a view to determining its value from a hydrating standpoint. It is believed by those familiar with the subject that the test will show flattering results. The officers of the Brokensword Stone Co. are: John A. Chesney, president; P. J. Carroll, vice president and general manager; W. H. Picking, treasurer, and S. M. Hall, secretary.

Well Known Lime Man Dead.

W. W. Smith, of Ossining, N. Y., died March 12 at his home in that city of heart trouble. Mr. Smith was sixty-three years old and was a veteran of the Civil War. He was connected with Rockland-Rockport Lime Co. Until within six years ago he had been connected with the plaster trade, having been with the Higginson Wall Plaster Co. and the J. B. King & Co. He was one of the pioneers of the plaster business.

Looks for Big Spring Trade.

O. F. Perry, manager of the Rockland-Rockport Lime Co., of New York, said, in speaking of business recently, that on account of weather conditions the past winter had been rather dull, but with the advent of bright spring days the business would pick up again and thus prospects are bright for a big spring trade.

The Eels Lime Co., of Boston, Mass., and Rockport, Me., has been incorporated with a capital stock of \$15,000.00 by Thomas W. Carter, Edward Bryant and Francis R. Sullivan.

The Ohio and Western Lime Co., of Toledo, O., has increased its capital stock from \$1,000,000.00 to \$1,500,000.00 for the purpose of providing funds for taking over the property of the Norris & Christian Lime Co., and the Central Ohio Lime Co., of Ohio.

A company has been formed at Bellefonte, Pa., for the manufacture of lime by A. C. Mingale, John L. Olewine, John Walker, Andy McNutt, and Archibald Allison. The company is capitalized at \$100,000.00 and has over 100 acres of the best limestone land in Pennsylvania. They expect to have the kilns in full blast within two months.

The Casoosing Lime Co., of Reading, Pa., has been incorporated by Albert A. William A. and Frank S. Gery.

The Blount Quarry and Lime Co., of Blount, Ala., is considering engaging in the manufacture of lime and will want plans and materials for the erection of modern kilns.

The Brightwater White Lime Co., of Brightwater, Ark., has been incorporated with a capital stock of \$2,500.00 by B. F. Baker, J. H. Buttram, M. Bray, E. C. Torbett and J. D. Torbett.

The Cheshire Lime Co., of Cheshire, Mass., has been incorporated with a capital stock of \$20,000.00 by George Z. Dean, W. E. Dean and H. W. Dean.

A new company has been formed to carry on the business of the Bethel and Redding Lime Co., and the company is to have an office and sales room at 16 East First Street, Mt. Vernon, N. Y. William Archer, of the New York contracting firm of Dawson & Archer, has been elected president. William A. Miles, of Mt. Vernon, is secretary.

Six kilns of the Ash Grove White Lime Association at Ash Grove, Mo., were destroyed recently by fire, causing a total loss of \$30,000.00 with insurance amounting to \$16,000.00. Besides the kilns the barrel house, machine cooperage shops, cooperage stock house, lime sheds and warehouse sheds were destroyed. The plant will be rebuilt.

James E. Phinney, of Kingston, N. Y., died in that city March 16 at the age of 69 years. At the time of his death Mr. Phinney was superintendent of the Newark Lime and Cement Manufacturing Co.

THE ARCHITECT IS GRADUALLY COMING AROUND TO THE ADOPTION OF CONCRETE CONSTRUCTION. ALMOST EVERY IMPORTANT COMMUNITY NOW HAS AN ARCHITECT WHO IS TAKING THE LEAD BECAUSE HE IS RECOGNIZED AS A MAN WHO KEEPS UP WITH THE TIMES.

Cement.

50,000,000 Barrels in 1906.

Fifty million barrels in 1906—that is the record made by manufacturers of all kinds of cement according to figures compiled by the United States Geological Survey.

This statement is exact within a small fraction of one per cent and is issued in advance of the annual report on the production of cement which is now being prepared in that Bureau. The returns on which it is based are complete with the exception of those from four small plants.

The total production of all kinds of hydraulic cement in 1906, including Portland, natural rock and Puzzolan cements, was 50,027,321 barrels, valued at \$54,015,713.00.

Of the above total amount of cement manufactured in the United States in 1906, 45,610,822 barrels were Portland cement, with a value of \$51,240,652.00; 3,935,275 barrels were natural-rock cement, with a value of \$2,362,140.00; and 481,224 barrels were Puzzolan cement, valued at \$412,921.00.

Prices were good in 1906, and showed an advance over those of 1905. The total production of cement in 1905 was 40,804,308 barrels, valued at \$36,012,189. Comparison of totals for 1905 and 1906 shows an increase in 1906 of 9,133,013 in production and \$18,003,524.00 in value.

Notes of the Trade.

The Edison Portland Cement Co. will shortly open an office in the McChesney Building in Pittsburgh. M. M. Hunter will be in charge. This company expects to double the capacity of its plant at Stewartsville, N. J., this season. This will give them an output of nearly 10,000 barrels a day.

The Bonner Portland Cement Co., of Kansas City, with a capital stock of \$2,000,000.00 has been organized for the purpose of building a 2,000-barrel mill at Bonner Springs and has purchased the Bonner Springs Oil and Gas Co. for \$200,000.00 and 260 acres of land underlaid with limestone and shale. The gas will be used to supply power for the works. W. E. Gheen, of Philadelphia, is president of the company. W. H. Caffrey, of Kansas City, is vice president and general manager. J. D. Waters, of Bonner Springs, is treasurer, and A. L. Cooper, of Kansas City, is secretary. The erection of the plant will be begun shortly.

Eastern capitalists are said to have been prospecting near Sheridan, Wyo., with a view to locating a cement plant there.

It is reported that Andrew Chilberg and other Seattle, Wash., capitalists, are breaking ground for the establishment of a cement plant on Baker River, Wash., in Skagit County.

The King's Rock Cement Co., of Portland, Me., has been incorporated with a capital stock of \$750,000.00 by J. E. Manter, president and C. D. Fullerton, treasurer.

John Newburn, of Des Moines, Ia., and W. E. Foshier, of Harvey, Ia., are said to have options on 1,200 acres of land at Harvey, containing materials for the manufacture of cement and also a fine vein of coal and that they propose to organize a company to manufacture cement.

The Northwestern Portland Cement Co. will build a model town of 700 or 800 houses at Kendall, Wash., to house the employees of its plant there. A farm purchased for this purpose has been staked off into acre tracts and each employee will be given a house and grounds where he can cultivate a garden and keep a cow or chickens. Only married men will be employed and the population of the community is expected to be between 3,000 and 4,000.

The Dexter Portland Cement Co., of Nazareth, Pa., has increased its capital stock from \$300,000.00 to \$500,000.00.

South Africa Offers Good Market.

Consul John H. Snodgrass of Pretoria, in response to inquiries regarding the cement industry in South Africa writes: Since the British occupation here, South Africa has presented one of the very best markets in the world for cement because of the new life infused in the country through the public works departments of the various colonies, including harbor extensions, railway building, sanitary projects, cold storage concerns, and the like. Business blocks have been added to all the cities in which cement has entered to a large degree, an outside veneering always being added to the brick interior both in dwellings and in office buildings. It is not surprising, therefore, that during the past four years the importations of the product have not fallen much below \$1,000,000.00; in fact 1903, the banner year in all importations, records \$2,500,000.00 worth of cement, while 1904 was but little behind that record. In that competition America cut but little figure, shipping to the Transvaal less than \$400.00 worth in 1903, and about double that amount the following year, while Germany's contribution during the same period was \$341,875.00 and \$529,800.00 respectively, England following with \$217,725.00 and \$252,325.00 for these two years.

Before 1908 the United Kingdom furnished the bulk of the cement imported, but with the subsidizing of steamship lines and cheap rates to seaports in the Fatherland, Germany entered the South African field that year and captured 16 per cent of the total imports. Four years later, Belgium and Denmark entered the lists, when the position of the principal competitors stood as follows: United Kingdom, 43.4 per cent; Germany, 37.2; Belgium, 18.0, while the remaining 1.4 was divided between Denmark and other European countries, the United States not figuring at all. In 1903 other nations, Austria, France, Italy, Holland and Sweden, took part in the competition and captured part of the trade of Germany. Great Britain increased to 51.4 per cent and Germany dropped to 23 per cent. America, in the meantime, had sold in the neighborhood of \$400.00 worth in that twelve-month—a poor showing. From that time, however, the United Kingdom has been gradually increasing its hold, and advanced from 70 per cent in 1904 to approximately 90 per cent last year, of the total imports, while Germany decreased nearly to its standing in 1898.

The British affirm that their hold on the market is due to the firm and united action of their manufacturers to the uniform quality of their product, and also, to some extent, to the customs preference, the last-named reason probably furnishing the greatest impetus to their trade, though they claim that the subsidized steamship lines of the Germans make up for the preferential tariff.

The one factory in South Africa, situated just outside the limits of this city, was a failure up to a year ago, when Ezekiel Davidson, an American, was brought here and placed in charge. He immediately purchased an American kiln, which was substituted for an ancient one that had been in use, and introduced American ideas. This resulted in 1905 in a production of 75,000 barrels, which was marketed here at 25 shillings (\$6.08) a barrel, and I am told that many times that amount could have been sold in Johannesburg alone. It is understood that the Pretoria factory's capacity will be increased three-fold, and that other mills will be erected near Johannesburg and in the Orange River colony.

My advice to Americans is to get into the market. If it is not possible to compete with the British preferential tariff, then erect factories here. That would bring a surer and safer reward than to hazard investments in gold and diamond claims.

I have been asked the question, "What suggestions do you offer to American firms desiring to sell in this country?"

I reply, first, take warning from the case of Germany and do not place an inferior product upon the market simply because it is cheap and sells well at sight, but which in the long run means ruin. Produce as superior an article as is said to be produced in England, and if it can be made at an equal cost at home I believe, that even with a preferential tariff, the American manufacture will, in the course of a comparatively short time, take precedence of the English goods. It will be futile to attempt to introduce American cement here without a strong effort by way of traveling salesmen who will be able to organize the territory through the agencies they shall establish. Should the ocean freights between New York and the coast towns of Africa be reduced and the lines be removed from the combine, then America will stand a splendid chance of furnishing the bulk of cement to South Africa.

Uncle Sam as Cement Manufacturer.

In the March number of *Forestry and Irrigation* there is an interesting article which describes the United States government's entrance into the field as a cement manufacturer. Those who are conversant with the project of reclaiming the Arizona desert by the construction of the big Roosevelt dam at the Salt River remember that when the government asked for bids for the cement to be used in the concrete work in the dam, which is 294 feet high and 800 feet long, all tenders were rejected because the location of the site, sixty-two miles from a railroad, made it impossible for cement manufacturers to bid less than \$4.89 a barrel for the 240,000 barrel contract. Figuring the lowest rates for rail and wagon haul this bid could not have been more than sixty cents a barrel, which could not be regarded as exorbitant in view of the fact that Western mills are getting \$2.00 a barrel from the government for cement in other localities.

Then some expert of the Reclamation Service discovered a ledge of limestone which outcropped above the dam site and at a convenient distance a deposit of clay. With the materials at hand the government decided to manufacture its own cement and a mill with a capacity of 350 barrels a day was installed, the equipment being furnished by the Allis-Chalmers Co. Describing the operations of the mill *Forestry and Irrigation* says:

"Constant and careful tests of the product have proved the excellent quality of the cement, and the accurate cost-keeping methods employed show conclusively that Uncle Sam actually will save about half a million dollars on the cost of the project by reason of this experiment. The following table summarizes the cost of manufacture for the months of October and November, during which period the mill was working at only half capacity:

	Oct.	Nov.	
Salaries and labor	\$0.75	\$0.70	
Maintenance material	.14	.15	
Quarry explosives	.015	.02	
Clay digging	.03	.034	
Clay hauling	.08	.074	
Miscellaneous supplies	.05	.04	
Miscellaneous labor and materials	.01	.016	
Fuel wood	.01	.006	
Fuel oil	.89	.89	
Electric power	.15	.20	
Total			\$2,125 \$2,13

The average cost of \$2.13 per barrel is a trifle less than the government is now paying for cement f. o. b. mills in several parts of the West. With the government plant working full capacity it is estimated that the cost of manufacturing will not exceed \$1.80 per barrel. Up to the present time, the mill has turned out 70,000 barrels of cement. Much of this has been utilized in canal lining, headworks, pressure pipes, aqueducts, and crossings. Now that the dam has been erected to river grade it is expected that the mill will be running at full capacity in the near future."

German Cement Industry.

Consul-General Hugh Pitcairn, in transmitting statistics from Hamburg concerning the German cement industry, says:

The German cement industry is looking back upon the year 1906 as an extremely favorable one; the business was throughout more profitable in every respect than during a number of previous years. The joint-stock capital of thirty of the largest works, representing approximately \$22,000,000.00, yielded, roughly estimated, from \$2,300,000.00 to \$2,500,000.00 interest, or 10.7 to 11.4 per cent. In the year 1905 the dividend amounted to about 8.5 per cent, calculated on a capital of \$21,200,000.00. Dividends of the companies in question in the last eight years, 1899-1906, were as follows: 14.3, 11.25, 5.24, 4.41, 5.14, 6.58, 8.5, and 10.7 to 11.4 per cent respectively.

The reason for this favorable development in the industry was chiefly the building activity throughout the country in 1906. Although during 1904 and 1905 a similar activity prevailed, prices suffered in those years from the consequence of over-production. Notwithstanding the fact that in 1905 such an over-production did not make itself felt so much as in the preceding year, the production during the year 1906, although a number of new works were put in operation, did not in general exceed in a marked degree the demand. This supposition is confirmed by the statistics of the imports of cement during the last year. In 1905 exceptionally large quantities were



VIEW OF BLUFF FROM WHICH MARQUE TTE PORTLAND CEMENT CO. GETS THE ROCK.

imported, but in 1906 the imports increased further, as the following statistics prove. During the eleven months from January to November of the last six years, 1901-1906, inclusive, the quantities of Roman and Portland cement and hydraulic lime imported into Germany were as follows:

	Tons.
1901	84,185
1902	51,099
1903	48,602
1904	57,325
1905	140,271
1906	221,449

By far the largest quantities were imported from Belgium, chiefly into western Germany. The consequence was that the Rhenish-Westphalian Cement Syndicate, although it was itself in full activity throughout the year, resorted to energetic measures by opening sales rooms in Cleve and reducing its prices to beat down foreign competition. In other respects, however, prices increased slowly but steadily. This favorable tendency was furthered by the fact that the feeling among the various German cement syndicates was a more peaceful one than in the preceding years; furthermore, because enormous quantities of cement were exported, in which movement the San Francisco and Valparaiso earthquakes were important factors.

Cement Materials in Wyoming.

A recent report entitled, "Portland Cement Materials in Eastern Wyoming," written by Sydney H. Ball of the United States Geological Survey contains the statement that Portland cement can probably be made in that district at a cost below the present local prices of Eastern brands. Raw materials suitable for its manufacture were located by him last summer in the vicinity of both Newcastle and Cheyenne.

The rocks sampled in the vicinity of Iron Mountain, which is about forty miles from Cheyenne, include limestones from the Niobrara formation and the Minnekahda limestone, and shales from the Graneros formation, and the Pierre shale. The area to which a Portland cement plant, situated in the neighborhood of Cheyenne, would ship its product, includes the eastern half of Wyoming, western Nebraska, northeastern Colorado and a part of northwestern Kansas.

The best limestone sampled is from a hill of Niobrara which lies east of the end of the Bradley Spur across the narrow flat. It lies practically on edge and could be cheaply quarried, possibly by the use of steam shovels, although considerable blasting would probably be necessary as depth was acquired. Analysis shows that it contains 6.44 per cent silica, 1.46 per cent alumina, 2.32 per cent ferric oxide, 45.90 per cent lime, and 2.65 per cent magnesia. This is a good limestone for cement-making purposes, although the relation between silica and combined alumina and ferric oxide is low. The Minnekahda limestone, which is found here in abundance, is much poorer in quality than the Niobrara, as it is high in silica and comparatively low in alumina and ferric oxide.

[Red Ring in New Hands.]

The important announcement is made that the plant, assets and good will of the St. Louis Portland Cement Co., manufacturers of the Red Ring brand of Portland cement have been sold to the Union Sand and Material Co., with offices in the Liggett Building, St. Louis. H. L. Block, who is president of the latter company, says that the manufacture of Red Ring will be under the direct management of H. Struckmann, chief engineer and general manager, and the sales department under A. H. Craney, Jr., as heretofore. The capacity of the plant will be immediately increased to 10,000 barrels a day. The new plant will be equipped with gas engines and producer gas will be used as fuel for the kilns, the whole plant being driven electrically.

Quarterly Cement Meeting.

The quarterly meeting of the American Portland Cement Manufacturers' Association will be held in the Bellevue-Stratford, Philadelphia, April 9 and 10. Among the papers, which will be read at the meeting, are the following:

"Concrete Bridges" illustrated with stereopticon views, by George S. Webster, A. S. C. E., chief engineer of surveys of the city of Philadelphia.

"Cement Concrete Roads," by Walter S. Hassam, Worcester, Mass.

"Tests of Cement and Cement Products," by Edward S. Larned, of Boston, Mass.

"Concrete Street Pavements," by H. L. Weber, chief engineer of the Fort Wayne and Wabash Valley Traction Co., Fort Wayne, Ind.

German Cement in Costa Rica.

In answer to the letter of an American firm in regard to the shipments of cement to Costa Rica, Consul Chester Donaldson, of Port Limon, tells why the German make is used, as follows:

"The only reason why German and Belgian cement is preferred to the American article is the way they protect theirs, by using an iron drum instead of a barrel made of wood, for all shipments to this coast. The reason for this is evident when the climate is considered. During a great part of the year it is so moist that clothing hung up in a wardrobe will mildew in less than a week unless taken out every other day and put in the sun. Barrels of cement sometimes come broken open and often have to stand on open cars or on an uncovered dock for days. It becomes moist and hardens, thus being worthless. Our largest importers of cement claim that the only reason why they buy German instead of American cement is because the German stands the climate better, not because it is cheaper. They prefer the American article."

In all of the conventions of the dealers in builders' supplies as well as those composed of cement users it is to be noted that the cement industry is considered to be the barometer for measuring the progress of the country as far as building and structural propositions of every kind are concerned.

Concrete.

Accurate Knowledge Necessary.

The business of manufacturing concrete blocks as a structural material has received so much attention and careful study in the last three or four years that it can no longer be considered as an experiment. There are certain definite qualifications now recognized to be indispensable in the production of a passable block that calls for well qualified experience or definite instruction from one who has learned by both experience and observation before a good building-material can be produced. It is now recognized that a building block can not be made of just any old material that may chance to be handled with a little cement and water to hold it together. The man who would make blocks that will sell must provide suitable materials and he must be in a position to secure these materials economically. No one can make a good product without good material and even a good product will not find a buyer unless it can be produced at a price that compares favorably with other materials that could be used for the same purpose.

Provided with good materials at a cost that is fairly commensurate with the fixed price of competing materials, the man who would make a success of the business of manufacturing building blocks must have a considerable knowledge of the requirements of the product that he undertakes to manufacture as well as good practical knowledge of the building contractor's business. Nearly every manufacturer of building blocks considers the product of his own factory a superior product and it is hard indeed to convince him that there is any fault to be found with his blocks. The slightest suggestion of a criticism that might lead to an improvement makes him begin his tirade about the kickers and knockers who are continually belittling the business. Often this manufacturer has a product that is so good and so much better than anything he has in his local market to compare it with that his high esteem of his block seems to be well founded. Yet, if he could only be induced to change his aggregate so as to get it more scientifically correct or if he would reorganize his system for curing his blocks after they have been molded, the expense of such changes would be trivial as compared with the enormous increase in the value of his product. It might really mean to him the difference between doing business upon the basis of making a bare living and that of rapidly accumulating a fortune.

More Attention Paid to Aggregate.

We are glad to note that our unceasing efforts are bearing fruit in the concrete industry by reason of the fact that much closer attention is now devoted to the preparation of the concrete aggregate than in previous seasons. It is not uncommon in these days to read specifications of the concrete engineer calling for two grades of stone in two distinct sizes and two sizes of sand accompanying the clause, "All aggregate materials to be washed and thoroughly cleaned."

The aggregate of sand and gravel or crushed stone constitutes 80 to 90 per cent of the entire concrete mass, and when the aggregate is so imperfectly known as has been the case in most of the concrete work up to the present time it is strange indeed that so much success has been attained in the use of concrete as a structural material. If the aggregate in every case was perfectly clean, graded and reduced to the basis of a fully known quantity then with the use of any standard Portland cement the concrete engineer could have an unvarying material upon which to base his calculation with scientific exactitude. This has been one of the most needed improvements in the practical application of concrete in structural work. The uncertainty of the unknown quantities expressed in the concrete aggregate can no longer be overlooked by the intelligent engineer.

The producer of sand and gravel and the crusher operator now recognize that the preparation of the

aggregate for concrete specifications is by no means the old slip shod proposition of a few months ago. At every important market the producers of these indispensable materials are equipping their plants so as to take care of the ever growing volume of business that is being derived from concrete operations. This improvement of materials from which concrete is made is the best indication that we are to have still better concrete work in the future than any we have yet seen. This improvement of quality will cost a little more money, but the certainty and the reliability is worth the price and there always will be purchasers who are glad to pay for high quality.

Substitution of Reinforcement.

There are localities where concrete construction is cheaper than iron frame or solid brick wall buildings and there certainly are localities where brick buildings or even steel frame structures can be built more cheaply than concrete. It is up to the concrete engineer to turn out a line of work that will commend itself to the public that concrete construction will be invariably considered the best obtainable construction, whether it be cheaper or not. Sometimes it is hard to secure the indispensable twisted reinforcing bars in just the sizes that are called for in the plans because the steel mills have taken on more work than they are able to deliver, and the railroads are not always prepared to furnish a car promptly when it is called for. The engineer under such circumstances is naturally tempted to substitute two bars of a smaller size when he has plenty of them at hand and finds it impossible to secure a supply of the size which has exactly twice as much steel as one of these and the permission of one substitution only means that as the work progresses and the relentless days of contract time are flying by that there is just as much pressure to permit other substitutions until the case grows desperate and as the time gets shorter a wholesale substitution is being practiced throughout the building.

This is not a pipe dream, there is hardly a concrete contractor and not a single engineer who hasn't been up against this bambastus face to face. It is the thing that has hurt them inwardly. In some cases it has seemed to be impossible to avoid substitution of sizes of steel bars to a greater or less extent on account of the failure to get the steel delivered on the job. After the contractor had employed his men and secured all the other materials it was a positive loss to him not to be able to proceed with the work and the pressure in this regard has become doubly acute when there is plenty of steel, and the only trouble is that he can not secure the proper sizes.

It would be good practice and would probably not cost the contractor a penny extra to get all of the steel delivered for an entire job or at least enough on hand to run up several floors before he employs his force of workmen, and by having the steel on hand in advance in the specified sizes, before the work begins, there would not rise the temptation, not to mention the terrific pressure, of having direct losses to undertake to substitute for the sizes of steel contained in the original plan where alone have the stresses and the factor of safety been calculated and determined. It is never safe to substitute without a new set of calculations, no matter how apparent the quality of the substitution may appear. It is not good practice and consequently not safe to depart from specified sizes and unquestionably the work should be stopped where the delivery of steel makes it impossible to provide for every detail just as the engineer has placed it in the work.

Will Have Larger Plant.

JAMAICA, L. I., March 18.—John J. Bliss, who handles everything for concrete construction, at New York avenue and South street, has three Hayden machines in operation and he has never stopped working them a day except Sunday, in two years. They have been making about 500 blocks each day. About May 1, they will move to their new quarters, where they have their own switch to a railroad and siding for loading and also a sand bank. With larger quarters and more modern machinery they will be in a position to fulfill all wants of their customers. In connection with their new plant, they will open a general masons' supply yard. In their work last year, they used 20,000 barrels of cement and prospects are bright for an increased business this year.

Another Failure Due to Ignorance.

In nine out of every ten of the so-called "concrete failures," which enemies of the industry flaunt in the faces of prospective builders to turn them against this popular material, the failure has been shown to be due directly to the gross ignorance and lack of experience of the men who had charge of the erection of the building, which fell. While such "failures" may retard the growth of the concrete industry and may be a "knock" with those who do not take the trouble to investigate the causes of failure thoroughly, the progress of the industry can not be permanently checked and each year we shall see more and more of this class of buildings erected. Such "failures" also have their advantage in that they teach the lesson that while concrete is a most pliable material the erection of buildings with it can not be undertaken by mere children or by ignorant workmen. The erection of concrete buildings calls for thorough knowledge of the possibilities and limitations of this material.

A case in point is the finding of Judge Willis A. Kingsbury, of the First District Court of Southern Middlesex, Mass., in the inquest into the death of twelve workmen, who were killed in a collapse of a building in South Framingham, Mass., July 23, 1906. The report severely censures the architect, contractor and subcontractor of the building as wholly to blame for the failure.

The building was known as the Amsden Building and was three stories high, built of cement blocks with one outside course of bricks. The blocks were of a one to three mixture. The outer foundation wall was of concrete of cement, sand and gravel mixed in the proper proportions. The decision fails to find any fault with the concrete. The interior of the building was of steel beams with floors of cement reinforced by heavy wire cloth to be imbedded wholly in the cement. The steel floor beams were supported by hollow iron posts, one placed above another from the cellar to the roof and in and below the level of the cellar they rested on pier footings four feet square at the base and tapering to two and a half feet at the top with a cast iron plate two inches thick in the center and one inch at the sides. The soil after a thin coating of loam had been removed is sand with probability of quick and running sand underneath. These pier footings were built down about a foot below the water level on the lot.

The architect, according to the judge's finding, had never had any experience in concrete construction before. The contractor had only had experience in the erection of frame structures. Continuing, the report of Judge Kingsbury says:

"The plans and specifications of the architect are found to have been ample with one exception. The bases of the pier footings should have had a much larger superficial area because of the treacherous nature of the soil underneath. The steel frame construction was furnished by a subcontractor. The girders were lighter than called for by the specifications of the architect, less securely fastened to each other and to the piers than good construction demands and less so than the architect's specifications required. This construction, however, was in accordance with plans furnished to the architect by the subcontractor. While the ineffective tying of these girders probably would not have prevented the collapse of the building it likely would have delayed the fall sufficiently to have allowed some of those killed to escape.

"In the excavation of each of the pier footings there was about a foot of water and into these excavations a dry mixture of cement, sand and gravel was carelessly placed by the contractor. The various ingredients were separated to some extent by the water, so that these footings inadequate in plan were made doubly defective by the execution. The contractor had stored at the time of the disaster on the first floor of the collapsed portion of the building from fifty to sixty tons of plaster blocks and cement in sacks. He had placed on the roof of the same portion of the building a coating of from eight to twelve inches of the wet cement mixture where a thickness of four inches was intended by the architect. After the accident some of the posts were found to have been driven down through the cast iron caps and pier footings several feet.

"The cause of the accident is found to be the inadequacy of the pier footings, aggravated by the overloading of the roof and first floor, and by steel frame construction, too light in many portions to bear even the dead weight of the building, to say

nothing of any load it might be called upon to bear in addition.

"The responsibility for the accident is found to rest upon the architect, the contractor and the subcontractor who furnished the steel and iron work; upon the first named for accepting steel work that was not in accordance with his own specifications and also for general remissness in personal supervision; upon the contractor for over-loading the building with unused material and for imperfect work in the pier footings; and upon the subcontractor for the erection of a steel frame which neglected the factor of safety."

German Building Precautions.

Consul C. B. Hurst reports that extraordinary care is displayed by the authorities of Plauen, Germany, to avoid defective construction in new buildings.

Work on masonry, when the temperature is too low, is forbidden under severe penalties. The law prohibits the building of walls and sewers with cement, or the use of concrete, when the thermometer at 8 o'clock a. m. registers less than 25 degrees F., or with lime mortar when the temperature at this time is 21 degrees F. This regulation refers to buildings above the surface, or in inclosed rooms. If freezing weather has lasted a long time, concrete construction may only be resumed after the consent of the building police. If freezing sets in so as to delay hardening of the concrete, the wooden frames used in the work must be kept in place as long as the cold weather lasts. On days when building in the open air or open rooms is not permitted, due notices will be posted at the various police stations. A penalty exists for the violation of the building laws.

Concrete in St. Louis.

ST. LOUIS, Mo., March 15.—The rapid increase in the use of concrete in all lines of building is causing dealers in materials to take notice. It is supplanting the use of steel and iron columns to an extent that is already said to be affecting the steel trust. Its use in place of wood is made necessary by the destruction of the forests and scarcity of higher grades of lumber. The ease with which concrete is made and its adaptability is causing it to be used for many other purposes than in buildings, such as for walks, steps, fences, culverts and bridges. Its use has been augmented by the enormous building business of the past three years.

One of the largest concrete building enterprises in St. Louis is in Woodland park, bounded by Hamilton, Plymouth, Hodiamont and Julian avenues, in which about thirty houses of an artistic style of architecture have been erected.

One of the most noteworthy instances in which cement has been used in building, and one which proves its durable qualities, is in the roof of the coal elevators used by the Terminal Railroad Association in the yards near Fourteenth street. The smoke, from the locomotives, which is charged with sulphuric acid, has eaten away roofs made of other materials, including tile and terra cotta, but it has been found that cement shingles will stand the ravages of the acid. The roofs of these elevators are made of large concrete shingles, each 2 by 4 feet in area.

Building Sewers in Atchison.

ATCHISON, KAS., March 15.—The R. J. & W. M. Boyd Construction Co., of Kansas City, have a contract for building concrete sewers in Atchison and have the work practically completed. They use the H. C. Parmely sewer pipe moulds, which are in two pieces. This company are a well known New York concern and have a patent on this class of construction. The Boyd Construction Co. also built the sewers by the same method in St. Joseph, Mo. They put in 40,000 cubic yards of concrete flooring for the Nelson-Morris Packing Co.'s plant at Kansas City, and also built the American Dressed Beef Co.'s plant, which is of brick and concrete construction.

The Peerless Artificial Stone Co.

ST. JOSEPH, Mo., March 20.—The Peerless Artificial Stone Co. are contractors for concrete work, floors, steps and basements at 414 Francis Street. J. Lysaght, the manager, said that they are at present operating two block machines, making blocks for their own use and that they have had a busy season.

Doing a Big Business.

LITTLE ROCK, ARK., March 18.—The Leifer Manufacturing Co. are manufacturers of building block, tile roofing and hard plaster. They are also dealers in sand. Their manufacturing plant and sand dredgers are at the foot of Ashley Street. Few companies anywhere have been able to build up such a large business as this one in so short a time. They have quite a number of machines in operation making blocks of various kinds, among them being the Pettyjohn, Miles, Knickerbocker Cement Machinery Co. and Automatic, of Jackson, Mich. They also have quite a number of molds for the manufacture of steps, coping and porch columns. They have been manufacturing lintels reinforced with corrugated steel bars nine feet in length, which have given satisfaction. A great portion of their output has been shipped to various points outside the city. The main building is 64 x 160 feet, but they are going to build an addition 100 x 120 feet. During the past season they have erected nine buildings and also built a church at Scott's Station, Ark., thirteen miles from Little Rock, at a cost of \$7,000.00. Geo. Leifer, the president and general manager of the company, thoroughly understands the business and has been largely instrumental in building up this large business. During the coming season they expect to install a mixer and also put in a centrifugal sand pump. The present output of the sand part of the business is about 200 yards of sand a day.

St. Joseph Concrete Stone Co.

ST. JOSEPH, Mo., March 15.—T. M. Hunter, general manager of the St. Joseph Concrete Stone Co., says that his concern enjoyed a prosperous season, and that the outlook for spring is flattering. The building in which the business is conducted was built last March out of concrete blocks and is well adapted for the purpose for which it was intended. The back end of the building fronts on the railroad siding and sand and other materials are dumped into the chute and carried directly into the bins, thereby saving one handling of materials. They are at present operating three Walton and two Winget block machines, but Mr. Hunter makes all of his own moulds for his sills, steps and coping as well as his porch columns and caps. He is one of the oldest concrete operators in this district, having commenced in 1881. They recently erected a bank and store room at Denver, Mo., which has given complete satisfaction. They have also erected several buildings in St. Joseph. The general public has been slow taking up the concrete block idea, but from present indications this company will have all it can do during the coming season.

Prominent Milwaukee Concern.

MILWAUKEE, Wis., February 24.—The building material department of the Pennsylvania Coal and Supply Co., is in charge of Edward Whitnall, and this firm is one of the important factors in this city and throughout the state in the material line. They have large warehouses in different parts of the city, and last year handled over 98,000 barrels of Atlas Portland cement alone, as well as other brands. At their warehouse on Muskego avenue and Canal street, they manufacture concrete blocks, concrete sewer pipe and tile. Their factory is well equipped and they use the National Two-piece Concrete Block Machine. The concrete is mixed in a concrete mixer and then the block is made on the National Machine. They are then placed on cars and run into kilns, where they are left to cure for three or four days. The kilns are heated by coke, on which a stream of water drips, causing a steam and giving the block a thorough steaming. When the allotted time has expired, they are taken out and ready for building purposes. The company does a large business in this line as well as the material line. They manufacture 1,000 blocks a day as well as a large number of sewer pipe. The engineers of Milwaukee, Mr. Whitnall stated, preferred concrete pipe to the vitrified clay. During the next few months they will make several changes in their plant and expect to have one of the finest concrete block manufacturing plants in the country. They have put in another Phelps mixer and have ordered 100 cars with track, so that the blocks may be more easily put into the kilns and cured.

The artificial stone plant of Beck Bros., Sumter, S. C., was destroyed by fire recently with a loss of \$30,000.00 and \$15,000.00 insurance.

New Concrete Building In New York.

NEW YORK, March 16.—One of the novelties of construction in this city, is the Monolith, a twelve story reinforced concrete building in Thirty-fourth street between Broadway and Fifth avenue. The building has a frontage of fifty feet in Thirty-fourth street and thirty feet in Thirty-fifth street. When finished, it will practically be one solid piece from foundation to roof and impervious to fire and water. Actual construction work was begun last August and it is expected that the last pouring of the moulds will be made in August of the present year. Engineers, architects and builders from most of the big cities of the United States and from abroad have examined the construction work as it progressed and have frequently conferred with Samuel Green, the builder and owner of the structure. When the building was projected it was planned to have it a six story structure. Conditions changed so rapidly, however, in the Thirty-fourth street section that Mr. Green revised his plans, first to make the structure eight stories, then ten and finally resolved to have it twelve stories. Floor space is being eagerly sought in the building and it is understood that the two stories in the Thirty-fourth street front and one in the Thirty-fifth street side have already been taken.

There are thirty-four concrete columns in the walls of the building.

These columns are "run" inside of wooden frames and moulded to almost twice the thickness of the walls, which are subsequently "run" in the same manner as the columns. As the concrete is being emptied into the moulds, flat, steel reinforcing rods of varying thicknesses, ranging from two inches to one-half inch, are placed in the material.

From gable to gable, fifteen concrete girders are placed in position on each floor where the steel floor beams are set in the ordinary building of steel construction. These girders, extending from one side wall to the other, are molded in the same manner as the upright columns and form practically horizontal grafting on the concrete upright columns.

Between these girders the floors are created of concrete as the structure is reared. False works for the flooring is made by placing planks from girder to girder. Upon these are laid tile of medium size, over which a thin coating of concrete is poured. This binds the tile and creates ceiling. Above this a coating of "rough" concrete is run to a thickness of four inches. After this has set two inches of "finish" concrete is poured on, which forms the floor. Thus by practically one operation the ceiling of one story and the floor of another is created.

On the Thirty-fourth Street and Thirty-fifth Street fronts the Monolith is to be of granite up to the fourth floor. Steel anchors have been moulded into the front like giant pins to bind this granite work. Above the fourth floor, the front of the building is to be of ornamental concrete stucco work. The concrete has been "run" in without ornamentation and carvers will chisel out the figure designs that will show when the building is finished.

It is maintained by the builder of the Monolith that it will be of absolutely fire-proof construction. He stated today that the Board of Fire Underwriters had rated the building lower than any structure of its height in the city. Practically no wood is to be used in the construction work, and only such steel as is necessary in providing for doors and windows. There are, however, six steel columns running latitudinally along each floor midway between the side walls as supports to the concrete columns where the width of the building is fifty feet. Where the width is less than that no supporting columns have been deemed necessary by the building department. The building will be provided with three elevators. The available space for rental on each floor will be about 5,000 feet.

A Correction.

In the December issue of ROCK PRODUCTS, we published a picture of a concrete church building erected at Little Valley, N. Y., by the Thompson Cement Stone Co. It was stated that the Thompson Cement Stone Co. is located at Towanda, N. Y., but should have been Gowanda, N. Y.

The Crescent Concrete Construction Co., of New Orleans, has been incorporated with a capital stock of \$50,000.00 by William Renaudin, Marcellin T. El fert and L. Amilcar.

H. O. Williams is contemplating the establishment of a concrete block plant at Elizabethtown, Ky.

ROCK PRODUCTS.

As to Clay in Sand.

Of interest to all workers in concrete is the following correspondence, which recently passed between L. L. Bingham, of Estherville, Ia., former president of the Iowa Association of Cement Users, and E. S. Larned, C. E., of Boston, Mass., chairman of Committee on Tests of Cement and Cement Products, National Association of Cement Users. The subject of foreign materials in concrete, especially clay, is one of the most important features of the industry, and it is likely that some other cement users would like to express their opinions on the question through ROCK PRODUCTS. Mr. Bingham's letter to Mr. Larned and the latter's reply follow:

Mr. Bingham to Mr. Larned.

I dislike to trouble so busy a man, but there was one point brought up at our recent state convention which I confess rather scared me. If the conclusion be correct I am glad to be forewarned. If, however, it was not justified, I want to be relieved from unnecessary apprehension.

It was with regard to foreign matter in sand. You know a number of tests have proven the greater strength of briquettes in the making of which different percentages of clay or loam were added to the sand. Page 46, February "Concrete," again calls attention to the fact and conveys the impression that up to 12 per cent of clay is beneficial rather than otherwise. I don't doubt it, so far as immediate tensile and compressive strength is concerned, but how about life? That's the point with me.

Iowa and Southern Minnesota are using rapidly increasing quantities of cement drain tile, most of them made from bank sand, containing 1 to 6 per cent of clay, some banks even 8 to 10 per cent.

Mr. H. H. Reinhart, assistant at Ames, instanced a series of tests with different percentages of foreign matter, made by him some years ago, with the usual results of greater strength. The unbroken briquettes were, however, left in a shallow curing pan containing water, for several months, with the result that total or partial disintegration resulted, in proportion to the amount of foreign matter they contained.

What has been the general experience along this line? Not opinion, but definite knowledge. What percentage of clay is it safe to have sand contain? Absolutely clean sand is seldom found. The cleaner the better, naturally, but ideal materials are seldom practicable. To be explicit, are we justified in using in drainage concrete sand containing say not to exceed 5 per cent of clay, when cleaner is not readily obtainable?

The fact that even greater percentages in concrete that has stood for years with apparently increasing strength in footings, foundations and reservoirs, would seem to make some other cause responsible for the result cited, but I want to be sure.

Mr. Larned to Mr. Bingham.

Your inquiry in regard to the effect of clay upon cement mortars and concrete has been duly received.

In considering the meaning of tests where clay has been added in different percentages to the sand, you must take into account both the character and size of the sand grains, the proportion used and the amount of water used, also the method of keeping the briquettes either in air or water between the time of making and the application of the test load.

While some experimenters have found that in certain sands they can use considerable additions of clay with good results, their determinations can not be taken literally as applying to practical conditions.

It is a well known fact that clay, fine dead sand, even though siliceous, and other foreign materials, seriously retard the hardening of cement mortars, and consequently would likewise affect concrete.

If the sand be perfectly dry, as in the case of laboratory tests, and the clay also dry and finely pulverized, you can see that a more intimate and even mixture can be obtained than in the case where the sand may be moist and the clay occurs in lumps. The results are also affected by the degree of mixing and manipulation, which in the laboratory is carried to a greater refinement than it ever reaches in practical operations.

If a moderately coarse sand be used, and the proportion of cement added is not quite sufficient to fill the voids in the sand, it is conceivable that a small addition of clay, sufficient in addition to the cement to completely fill the sand voids, would result in a denser mixture and consequently increase the compressive strength of the mortar. This result is contingent, however, upon the sand and clay being dry

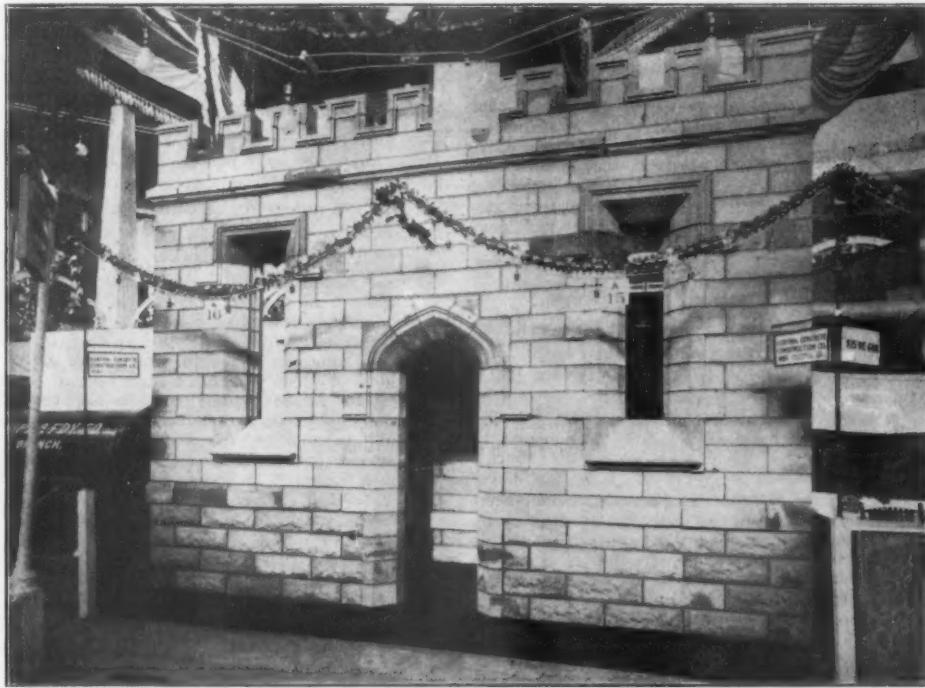


EXHIBIT OF CENTRAL CONCRETE CONSTRUCTION CO., AT THE GREATER LOUISVILLE EXPOSITION.
LOUISVILLE, KY.

when first mixed, and the cement thoroughly and uniformly distributed through the fine aggregate.

Where clay is found in association with sand in a bank, it becomes a question of how the clay is contained, i.e., whether in the nature of silt uniformly distributed throughout the sand or in layers or strata of small or considerable depth. If it occurs in the latter form, it naturally follows that it will be in the form of lumps throughout the sand and ordinary mixing is not sufficient to break this up and distribute it uniformly throughout the sand voids, and in consequence, weak spots will be found in the mortar or concrete made from such material.

If the sand grains and fine gravel be coated with clay, as is often the case, it will require a comparatively wet mixture and vigorous working to dissolve the clay sufficiently to enable the cement to bond with the sand and gravel surfaces, and even then, results are more or less uncertain.

The presence of clay depends upon its physical condition, or its state of division, whether in such a condition that the individual atoms can mingle with the mechanical mixture as a filler, or whether it is in a colloidal or state of semi-solution (gelatinous), such that it reacts on the total mixture, so as to prevent the bonding of the cement with the sand.

It may be difficult to anticipate this in actual practice without laboratory experiments to determine the physical condition of the clay. This may be done by elutriation and testing that portion of the clay which can not be drawn down within a certain period of time, by sedimentation, and which remains in suspense, thus indicating its colloidal state, which prevents the actual bonding of the cement with the aggregate, and therefore, setting of the concrete.

I have in mind two instances of failure directly traceable to the condition last named, and upon washing the sand and gravel before use, good results followed.

For some time past, engineers and concrete specialists have recognized the importance of analyzing and testing the sand before use, even though it appears upon ocular examination to be above suspicion. If you will do this, and test the sand as it occurs with cement, before use in any important work, you will avoid disappointment and oftentimes complete failure.

Clay in sand used for semi-dry concrete or cement sand blocks, or other cement products made of a semi-dry mixture, is more likely to give trouble and result in failure than where used in wet concrete mechanically mixed.

Inasmuch as your inquiry covers a most important feature in the use of cement, I am taking the liberty of forwarding it, together with my reply, to the editor of ROCK PRODUCTS, Louisville, Ky., requesting that he publish it in the correspondence columns and invite further discussion.

Fine Pennsylvania Plant.

ALLENTOWN, PA., March 16.—The new plant of the Keystone Cement Block Co. is now in operation. The main building is built with cement block, two stories in front and one in the rear. It is 90 by 200 feet and located along the main track of the Lehigh Valley railroad, enabling them to load and unload their goods without an extra haul. While most of the main building is used for the manufacture of blocks and brick there is also a drafting room, pattern shop, office and supply room and adjoining are the boiler and motor houses. Nearby is a separate building, 30 by 100 feet for trimming purposes.

The company made cement block exclusively heretofore, and its equipments for this purpose are complete, having two mixers, one a batch and the other a continuous mixer. There are ten block machines and a number of machines adapted to the manufacture of trimmings, such as lintels, door sills and window sills.

The company has installed a brick making machine which has a capacity of 20,000 bricks a day, and will now extend its business into that field. They are in a position to make all kinds and colors of brick one may desire, from the high grade pressed red and buff in color to the cheap grade used in ordinary buildings and for lining purposes. With their brick and block plant combined the company is now in a position to provide the builder at short notice with his material. The brick are strong and made of similar proportions as the block and the company claims they can manufacture them more reasonably than is usually charged for, either the high or low priced brick and its staying qualities can not be questioned, as cement is recognized as one of the most substantial building materials of the age.

They are at present making the block for the Transit company's new office building and have also finished the trimmings for two handsome house fronts for Steward Bros. The plant is pronounced the finest and best equipped in Eastern Pennsylvania and there is every prospect that it will enjoy a very busy season.

Notes of the Trade.

The Sanitary Burial Vault Co. of Rockville, Ind., has been incorporated with a capital stock of \$4,000.00, by Alexander Smock, Howard L. Hancock and William E. Ferguson to construct concrete burial vaults.

The Monolithic Double Wall Co., of Williamsburg, W. Va., has begun the operation of a concrete block factory. Directors of the company are C. W. Dowling, William Dawson, M. Richter, H. F. Dawson and W. P. Beeson.



ANNUAL CONVENTION OF NEBRASKA CEMENT USERS' ASSOCIATION, GRAND ISLAND, FEBRUARY 6, 7 AND 8.

Relation of Architects to Concrete Block Makers.

(Paper read before the Nebraska Cement Users' Association at Grand Island, Neb., by J. T. Summers, of Sioux Falls, S. D.)

I want to find out how many architects there are in the hall tonight. Please raise your hands. (There are five persons.) Next I want to ask how many civil and mechanical engineers there are present. (About a dozen hands went up.) Next I want to ask how many contractors in the hall tonight. (About one-half of the audience seemed to hold up their hands.)

I want to say to you, gentlemen, that there are so few architects and engineers present, that I am entirely at ease before commencing my paper. I expect to be criticised, and want to be criticised, for without criticism we can not expect to arrive at a proper conclusion, and when I am through with this paper, if any one of you gentlemen has any questions to ask, I shall be glad to answer them to the best of my ability.

I am very glad to be able to state to you, gentlemen, that the past year has developed a wonderful change with the architect and block makers, and assure you that there are seventy-five per cent of the architects with us today. And I heartily welcome them to our ranks. We can not get along without the architect, and they can not get along without us. Two years ago, we seldom saw one of their faces in our conventions. Today, they are attending all of the conventions. In fact, one, Mr. C. A. Turner, of Minneapolis, Minn., was elected president, last year, at the Northwestern Cement Users Association, and I want to say that he has made a very able and efficient officer. I attribute this change in their attitudes toward block builders: First, to their reading more of the concrete publications; second, to the fact that the demands for concrete buildings have become so numerous and popular, that the architect of today must draw plans to conform to this demand.

I will not, at this time, touch upon the quality of the block made today, as all of you gentlemen before me are too well posted as to the merits of the different blocks to need any comment from me, but like any other commodity, there will always be a demand for a good article at a good price. We are on the first round of an endless ladder. There is no limit to concrete construction and the hollow block is gaining ground every day. Right here, I want to read you a portion of an article, written by an architect, Mr. Lewis H. Gibson, of Indianapolis, Ind.:

"James J. Hill, president of the Great Northern Railroad Co., and with all, a great economist, statistician and brilliant writer on subjects of interest to the commercial world, has said, that at the end of fifty years will see the 'ironless' age, when there will be no metal used through the use of cement. Mr. Hill, a very wise and very efficient man, may not have realized the possibilities in the use of cement as an economical agent and its relations to the saving in the use of metal. Many structures are built with cement and metal, which do not consume more than three per cent of the metal that would be required, if steel alone was used. Be this as it may, we find ourselves at the beginning of the cement age and near the beginning of a 'woodless' age."

"The price of framing lumber is now such that

one may well consider the question of the use of concrete. There are conditions where concrete hollow blocks and concrete steel structure will cost less money and it always costs much less than steel, with fire proofing, other than concrete. This statement with regard to relative cost, of the material named, is not loosely made. It is based on an extensive practical demonstration.

"Some months ago, the writer was employed as the architect of a large factory, a building of 500 feet long and 187 feet deep at its wings. The materials recommended to the owners, were concrete and steel. The preliminary estimate from the office of the architect indicated slow burning construction of wood to be more expensive by five per cent and the actual bids on the work, by contractors, indicated a greater difference than that shown by the preliminary estimate.

"The owners of the property, in their eagerness to be fully convinced that they were getting, not only the best, but the cheapest, had drawings and specifications made for joist construction, with wood girders and posts; also with joist construction, with steel girders and posts, slow burning construction, with planking beams, girders and posts of wood; slow burning construction, with wood planking and beams and with girders and posts of steel. In connection with these various combinations, walls of brick cement blocks were considered.

"In every instance, the comparison, not only resulted favorably to the concrete construction, in the matter of cost, but bred in the minds of all, a determination that, from every point of view, the concrete steel is not only the best but the cheapest. So it must be, when a relatively new medium structural or otherwise comes into being, it must not only have superior merits, physically, as compared with other good things, but in order to receive early recognition, it must be obtainable at a cost as low or lower than the best competitive material. No product intended for the market can make rapid progress on any other basis.

"It is not necessary to go into absolute details as to the cost of this structure in order to make a clear showing. It is sufficient to say that the first figures, the cost of this structure, as a concrete steel building, approximated \$42,000.00. In slow burning construction of wood \$45,000.00, and steel frame construction, went well beyond this figure and this, without fire proofing."

Pardon me from digressing from my subject, but I want to say a word right here, concerning insurance on concrete buildings. I find in looking up the statistics, that in the State of Ohio, where insurance costs on other buildings, at the rate of 40 cents per \$100.00, the total cost of insurance on concrete buildings did not exceed 8 cents per \$100.00.

Is this not worthy of our consideration? It is well to bear in mind, in building, that there are two elements in the insurance question, one of which relates to the loss of business. Again it must be observed, that there is a definite relation between the cost of insurance upon the building and on the stock it contained. In Indianapolis, the fire tax is twice as large as the municipal tax. The fire tax is made up of insurance and protection costs.

Returning to my subject, before the engineering possibilities of concrete steel work will have been determined, we must realize that the proportion of cement in concrete must be lowest normal amount possible and the mixture of the inert material, the grav-

el, stone and sand, in a manner to reduce the voids, is quite as important as any other single process. The addition of cement may be normal, or abnormal. There may be too much cement or not enough. You will find the best architects disagree.

Some will say that the blocks must be of a uniform size, others the reverse. I find, from personal observation, in all kinds of concrete block building, the best effect is obtained by using blocks of a uniform size. And I have traveled through most all of the Middle Western States and I think I have seen as many different forms of concrete blocks as the average man.

I attended the National Convention at Chicago from January 7 to 12, 1907, and I think we had in that convention as complete an assorted lot of machines and blocks as was ever on exhibition at one convention. We listened to the most able lectures that it was ever my privilege to hear. And right here, let me say to you, gentlemen, it was the greatest school of instruction that the cement age has ever known. And I desire to urge each of you, gentlemen, to procure a copy of the proceedings of that convention and read it carefully. At this convention were present, and participating in this convention, a great many architects and engineers of note who were anxious and eager to learn all they could about concrete blocks. They entered into all the friendly discussions, relative to the merits of the materials used in concrete construction and when this convention adjourned, it did so with a better feeling prevailing between the architect and the block builders than had ever heretofore existed. And I am very proud at this time, to bring such tidings to you.

I also desire to say, at this time, that for the past month it has been my good fortune to be in a section of the country where there is a world of building and construction, and it is indeed wonderful the good feeling there is exhibited for cement and cement products, both by the builders or owners, and the architects. It has been my pleasure during the past year, to meet and converse with some of the best architects and engineers in the United States and much interest was manifested by them in the use of concrete hollow blocks. I would say, however, that these gentlemen demand a block made of the proper aggregates and under such pressure that dispels all voids and properly cured. And in connection with this, permit me to read you, gentlemen, a government report on concrete.

The pamphlet issued by the United States Department of Agriculture under the title of Farmers' Bulletin No. 235, which treats of cement mortar and concrete, is exceedingly creditable to its author, Mr. Philip L. Wormeley, Jr., testing engineer of the Department of Public Roads. It covers a practical field and should prove of genuine interest and value to the large class of cement consumers who use the material in small quantities or in operations not sufficiently important to employ the services of an engineer or expert mechanic. Practical knowledge, such as the bulletin imparts, will not only enable them to use cement intelligently and with satisfactory results from the mechanical standpoint, but to obtain many improvements at a minimum cost. Doubtless the lack of practical information of this character has restrained many from undertaking projects that would be entirely practicable with the department's pamphlet as a guide. In this instance the department has exercised good judgment in confining the

ROCK PRODUCTS.

work to subjects calculated to meet the requirements of the largest number of people, but it is safe to predict that there will follow a demand for additional information along this line. If the government continues to issue these pamphlets from time to time it will soon have acquired printed data quite as important to the people at large as to farming communities.

We do not claim that the government expert is infallible, at least not more so than his fellows in the private walks of life, but none the less it is conducive to a sense of comfort and satisfaction to have Uncle Sam at one's back. This is a feeling the block makers of the country will experience in reading the following statements made under the authority of the government, which has been conducting experiments in cement and concrete:

"Hollow block construction introduces a saving of material over brick or stone masonry."

"The cost of laying concrete blocks is less than for brickwork. This is due to the fact that the blocks, being larger, require a much smaller number of joints and less mortar, and being hollow, are of less weight than solid brickwork."

"A wall constructed of good concrete blocks is as strong or stronger than a brick wall of equal thickness."

"Concrete blocks, being easily molded to any desired form, will prove to be far more economical building material than the stone, which has to be dressed to shape."

"Experience has proved concrete to be a most excellent fire resisting material."

"Concrete blocks, being hollow, tend to prevent sudden changes of temperature within a house, making it cool in summer and easily heated in winter."

"The hollow spaces provide an easy means for running pipes and electric wires. These spaces may also be used wholly or in part for heating and ventilating flues."

It will certainly be conceded that the above is at least sincere and disinterested testimony.

The only place in this report that I would criticise is where the author fails to designate the absolute difference in the strength of brick walls and cement walls of equal thickness, which is known to me to be 57½ per cent in favor of hollow concrete blocks as shown by a government report made by Mr. Parks, inspector of government buildings. These investigations have been going on for several years, always resulting in favor of the hollow concrete blocks.

Now, gentlemen, in this connection, permit me to say, it is up to you to produce a block that will meet the requirements of all of the architects and engineers. They have never questioned the material but have seriously questioned the workmanship and had good grounds for so doing. It is therefore necessary that we, manufacturers of blocks, produce an article that is beyond question. Never in the history of this country was there such a great demand for concrete hollow building blocks as there is today. Every building supply house in the United States today is short of material of every kind. Therefore the demand naturally looks for the best material, at the lowest price. And "Mother Earth" has favored us in many ways, in producing an article that is unlimited in its supply. A noted engineer makes this statement: "There is enough marl and rock in the United States to produce cement sufficient to build the United States in one solid city twenty stories high."

It may become necessary, in due course of time, for the concrete users to erect and maintain factories for the manufacture of cement in order to protect our own interests. I want to say to the young men in this hall that I think it will be well for all of you to remember what I have said concerning the manufacture of cement.

I fully believe that the time will soon come when we will be obliged to protect our interest, in the block industry. All of the leading architects and engineers of today are realizing, more and more, the necessity of a close affiliation with the block builders and it is becoming on part of the builders of hollow concrete blocks, to build such a block that will contain the proper aggregates, and density, leaving no voids whatever, thereby meeting all the requirements and tests required by these gentlemen.

Another reason that the hollow blocks have been rejected by the large contractors and builders at times, is the inability of the manufacturer to furnish well cured blocks in such quantities as to meet the demand. I do not say this to discourage the manufacturer of hand blocks. We need them and must have them all over the United States. But I do say that the man, who is equipped to turn out



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from 700 to 1,000 well cured blocks, ready for the builder, in twenty-four hours, is the only man that will ever be able to meet the requirements of the heavy contractor and builder.

You will always find that every architect has a system of his own or some one around him to make a system for him. We should not condemn the architect too soon, for the reason that he has never had the experience of drawing plans for concrete block construction. Therefore, he needs the experience as much as the men who furnish the material.

In the past, architects have had nothing to do in drafting plans, except in wood, stone or brick. We want to lend them a helping hand in every way possible. We are not here to fight the architects but assist them in every way possible. We must conform to their ideas in every way that is possible, for in so doing, we are advancing the hollow concrete block business. I want each and every one of you gentlemen to read over carefully every word of President Richard L. Humphrey's address, delivered at Chicago, during the last convention. It is so full of good thoughts that we can not afford to pass it by.

I want you to also read all the papers of waterproofing of concrete blocks, of which there has been so much discussion. The reason that I digress from my subject on these various topics is that these ques-

tions are asked me by the different engineers and architects from time to time and have given rise to a great deal of discussion. And before this convention adjourns, it is my wish that the architects, engineers and block builders, get right down to a heart to heart discussion of the material things connected with the manufacture and use of hollow concrete blocks.

There is no reason why the manufacturer and the architect or engineer should materially differ as to the intrinsic merit of the hollow concrete block, nor should they differ as to its relation to other building materials for they each have it in their power to test their relative strength, their relative cost, and the cost of construction, and it seems to me an easy matter to arrive at a fair and equitable solution. The facts are, gentlemen, that we have the building material of the day. The cry all over the country is for cement and cement products, and no one knows this better than the architects and engineers before me tonight and in justice to their patrons are here to investigate and learn all they can regarding the hollow concrete building block.

Prize Loving Cups.

We are printing on this page half-tone illustrations of the silver loving cups awarded as prizes at the third annual convention of the Northwestern Cement Products' Association. The prizes were awarded to the following firms:

Blaw Collapsible Steel Centering Co., Pittsburgh, Pa., for "Most Unique Cement Product Display."

National Stone Co., Minneapolis, Minn., for "Best Display of Cement Block."

Miracle Pressed Stone Co., Minneapolis, Minn., for "Best General Display of Cement Equipment Machinery."

The Peerless Cement Brick Machine Co., Minneapolis, Minn., for "Most Attractive Cement Brick."

Expanded Metal and Corrugated Bar Co., St. Louis, Mo., for "Best Display Booth."

The Builders' Concrete Manufacturing and Construction Co., of Camden, N. J., has been incorporated with a capital stock of \$125,000.00, by O. S. Yerkes, M. Garrison and A. S. Flowers.

The Colorado Pressed Stone Co. has been incorporated with a capital stock of \$5,000.00 by J. E. Pond, J. E. Hooper and J. Breese.

The Independent Concreting, Cementing and Fire-proofing Co., of New York, has been incorporated with a capital stock of \$4,000.00 by Moses Bloom, Frank Bloom and Eddy Glackmann.

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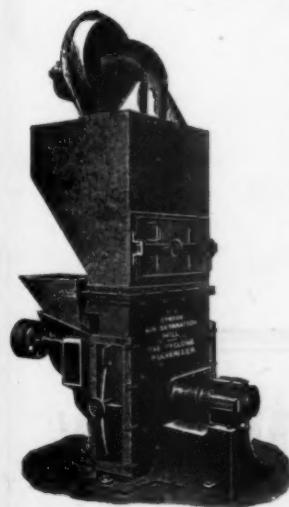
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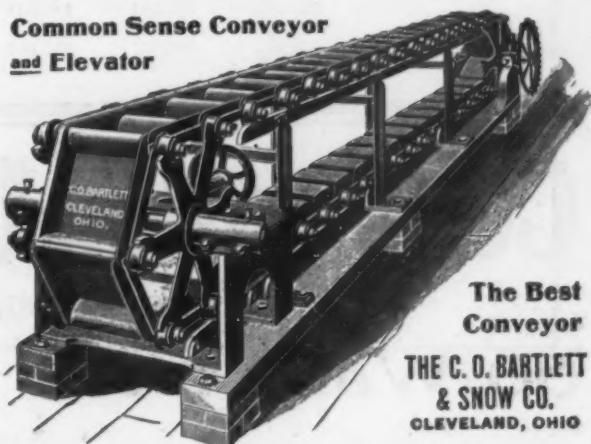
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J. Rogers Maxwell, Esq., President.
 North American Portland Cement Co.,
 30 Broad Street, N. Y. City.

February 28, 1907.

Dear Sir:

I address you, as the responsible head of your company, in behalf of my clients, the Combustion Utilities Company.

We have at hand a copy of what appears to be a circular letter, dated New York, December 5th, 1906, under the letter head and over the typewritten signature of said company and of yourself as president. We are informed that such a letter was widely disseminated among cement manufacturers. It contains the following:

"Our patents * * * cover all apparatus and methods for burning pulverized coal in rotary kilns that have been demonstrated to be commercially practicable, * * *."

My client has demonstrated that its apparatus and methods for burning pulverized coal in rotary kilns, are "commercially practicable," by long-continued test, and I have advised my client, as the result of exhaustive investigation, that such apparatus and methods do not infringe any valid claim of any known patent.

We understand that as responsible head of the Atlas Portland Cement Company, you once arranged for a test of your Hurry and Seaman patent No. 645,031 in a suit against the Martin's Creek Portland Cement Company (U. S. C. C., East. Dist. of Pa.,) but that after this case had been put to the test of several days' hearing in court and had been held by the court under consideration for months, you compromised with the defendant and dismissed the suit, thus blocking adjudication, when you had only to wait a few days in order to get a decision.

We believe that in all fairness to cement manufacturers and the public generally, you ought to have secured an adjudication at that time, and that you ought now either to desist from your claims or put them to test by suing my client, the Combustion Utilities Company.

Awaiting your early reply, I remain

Very truly yours,

(Signed) GEORGE COOPER DEAN.

Patents owned and controlled by Combustion Utilities Company. (Other Patents Pending.)

UNITED STATES PATENTS.

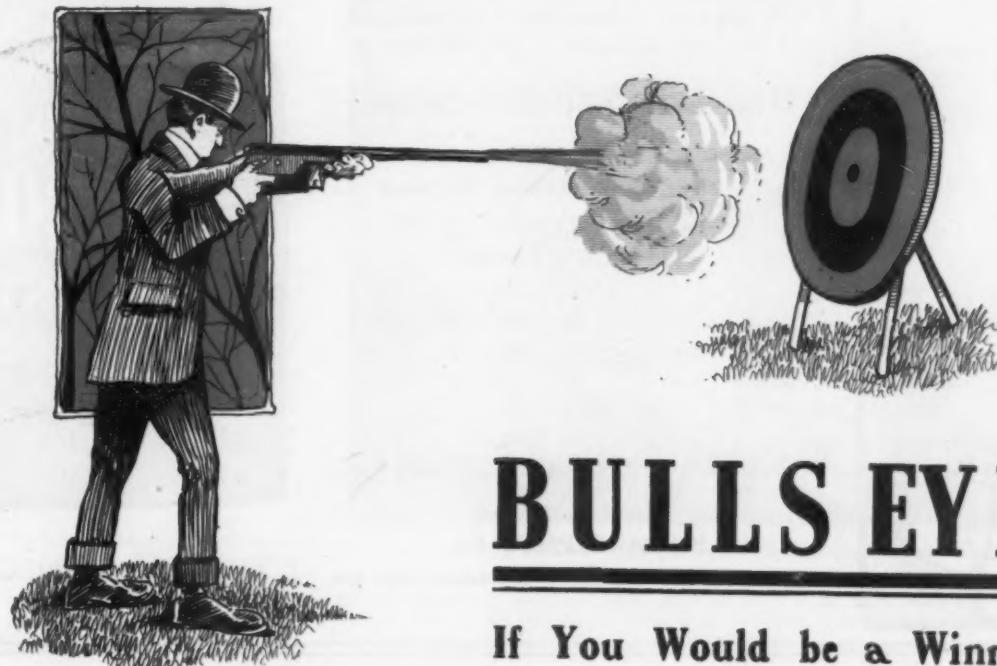
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721,871	793,362	798,327	811,706	814,279	821,994	843,079
788,503	795,208	798,500	812,193	815,913	821,995	843,592
789,266	795,257	798,667	812,194	816,973	821,996	843,669
790,253	795,258	799,317	812,786	817,163	825,305	843,715
790,487	795,259	803,886	812,834	818,018	827,517	844,504
790,488	795,790	809,339	813,627	819,045	828,306	844,857
790,489	797,506	810,044	813,628	819,046	829,105
791,461	798,023	810,685	813,629	819,127	835,506

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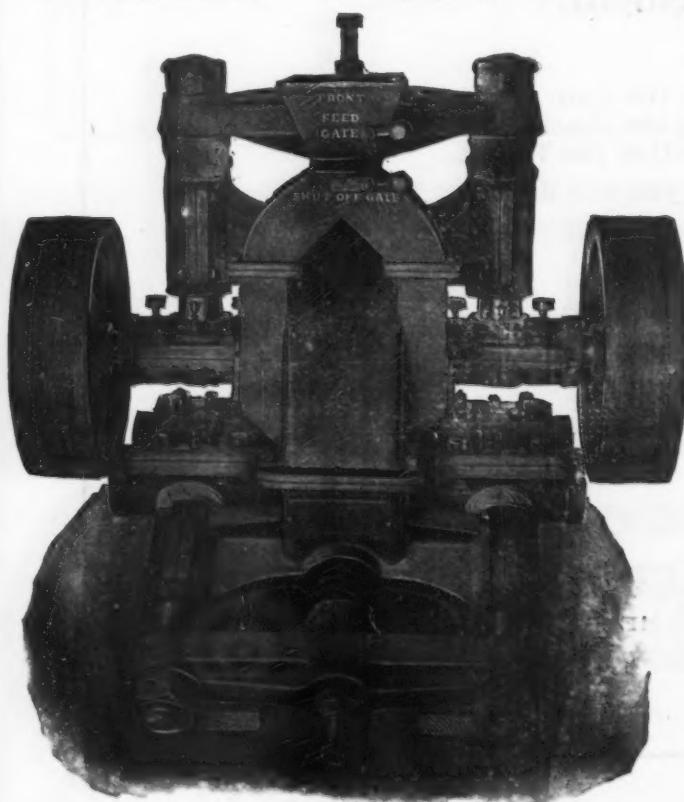
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CONCRETE IN CLEVELAND.

(Continued from Page 3.)

enough to hold not only the entire load of the green concrete construction, but also all of the imposed load due to further construction or the storage of supplies, so that there will be no vibration of the concrete while the setting is in progress. Too light centering often causes the bond of the steel and cement to be broken and then at least 50 per cent of the value of the work is destroyed. One other factor, to which many accidents are due, is that the work is often done too hurriedly. This may not suit some persons who want things rushed, but the fact nevertheless remains that the cement must have time to act. If work is to be done under a time limit, the centering must be figured accordingly and in no case should the centering be drawn until the cement has reached a final set. In my experience I have found that the final set does not begin under fourteen days. It then approaches a point where the centering can be removed and in twenty-eight days floors may be loaded to about 30 per cent of their strength. Full floor loads are not advisable under sixty days.

"Another cause of disaster is that the patentees of various systems in their efforts to underbid the other fellows are apt to figure on cheapening the work to a point where they can not do it safely and properly. As a result some jobs are bungled and the entire trade has to suffer as a result of somebody's greed. The most important thing in my mind in regard to concrete construction is that reliable firms doing concrete work should impress upon the public the fact that reinforced concrete is a special branch of engineering and must be done by persons who understand the work and who will use their knowledge to see that the work is properly planned and executed."

Probably there is no firm in the country doing so much actual structural concrete work as the Carey Construction Co., of Cleveland, of which J. D. Carey is president and W. S. Ferguson, chief engineer. This concern goes at concrete construction scientifically, Mr. Ferguson being a skilled engineer in that line of work. Mr. Carey declares that one reason his company has been successful is because when taking a contract it is figured on as expertly as steel construction. Some remarkable feats have been accomplished by this company and no serious accident has ever marred the success of the firm's work.

"There are several important features in concrete construction," replied Mr. Carey in reply to the question. "Probably the most important is the engineering feature. Men must be employed to superintend such work who are trained and skilled in the work. No attempt would be made to erect a steel structure unless an engineer was in charge to consider weights, etc., and no concrete building should be planned by other than those who are expert in that class of construction. Ignorance as to the chemical properties of cement is usually a great cause for disaster in concrete building. Men imagine that all they have to do is to mix some cement and proceed to use it, whereas some fine engineering difficulties must be faced."

W. S. Ferguson, the engineer of the Carey Co., has a few ideas on concrete construction, gained from an intimate contact with that work. "Effective concrete building depends largely on the people handling it," avers Mr. Ferguson. "When done under proper conditions I consider concrete work safer than steel. It is sound proof and as all steel has to be fireproofed in Cleveland it is consequently lighter in the end than steel. In case of deflection of beams it is a safer proposition because one can watch concrete closely and concrete will show a deflection sooner and can be more easily detected before a building is finally passed on as habitable. The space required for reinforced concrete is sometimes made an argument against it, because the depth of the beams are often greater. This is a great mistake for with good engineering better results can be obtained than with fireproofed steel. The same spans can be taken care of in concrete as in steel, and when the steel has to be fireproofed the weight is no greater finally. Concrete is all right if the persons designing it and overseeing its construction are competent. It is sometimes claimed that there is danger in concrete because common laborers often do much of the work. In steel construction do not mere boys heat the bolts and rivets and are not burnt rivets and bolts quite as dangerous as poor concrete mixing?"

"Again it is claimed that concrete construction is much slower than steel. That is not a fact. Al-



CONCRETE IN CLEVELAND; COAL TRESTLE BUILT FOR THE NATIONAL CARBON CO.

most invariably an order for steel must be given a factory three to six months in advance of the time it is delivered. Many persons think because a steel skeleton shoots up in the air rapidly that the steel structure is erected rapidly. Frequently a month or two can actually be gained on a concrete structure, all other conditions being equal. It frequently takes as long to fireproof a steel building as it does to erect an entire concrete structure. Concrete is less liable to vibration than steel and in large cities where immense amounts of traffic go along the down-town streets, or where railroads adjoin buildings this fact must be considered as important. Taken all together I think I can prove that the concrete building, where properly put up, will outlast any other class of structure under the sun."

That Messrs. Carey and Ferguson know what they are talking about is evident from some of the work they have done. They attempt nothing but large contracts—and a mere thing like cold weather does not interfere with their work. They have erected a splendid store building on Prospect Avenue, Cleveland, another fireproof storage on Euclid Avenue, two or three schools as well as many other large and costly concrete structures in other cities. Even in the depth of winter work is continued. Salt is placed in the concrete mixture to keep it from freezing. Sand is heated and water is boiling when used. Work is protected with manure, hot sand, paper—

anything which can be found to keep it from freezing until properly set.

Concrete for chimney building has been attempted in Cleveland with considerable success. There is one chimney, at the Sly Manufacturing Co.'s plant which is 70 feet high and which seems to meet all the demands made of it. An astonishing amount of concrete is being used in Cleveland for fireproofing purposes. Nearly every building now being constructed in the city which is meant to be fireproof is using concrete for floor filling in preference to tile. On some of the heavier buildings concrete roofs are also being used, notably the new Hippodrome building, which is under construction in the heart of the city. The day is past in Cleveland when contractors sneer at the value of concrete for foundation purposes and every month sees an increased use of cement and crushed stone instead of stone or brick for foundations and piers for new buildings.

The use of concrete building blocks started in Cleveland about four years ago, and during that time has increased to large proportions. There are three or four concerns in this city, notably the Cleveland Cement Building Block Co., and the Cuyahoga Concrete Stone Co., which produce 1,000 or more blocks a day, and sell them all without any trouble. The trouble with concrete block houses seems to be that they are built to imitate stone houses and do not have the individuality of their own that they should possess. Notwithstanding this fact there are scores of cement block houses in Cleveland and several other pretentious buildings in which the ordinary blocks have been used. Out in Collinwood one realty concern has purchased a number of acres of land, has laid it out in streets, has erected cement stone skeletons of houses and is selling them to the buyer under the stipulation that the latter may have the house finished as he pleases. This plan has several advantages not the least of which is that the walls are thoroughly weathered and are not liable to dampness when the finishing is completed.

Quite recently the city of Cleveland enacted a new building code, which is claimed to be one of the best in existence anywhere. Concrete construction being in somewhat of an experimental stage at the time of the code's inception, all structures of that class of work have been limited to six stories. There are at least a half a dozen buildings, however, which have been run to the limit. Spans are limited to 28 feet in length. There are many other provisions in the code which builders say are going to help in safeguarding concrete work in Cleveland and make it one of the best types of construction to be obtained.

FIRST STORE BUILDING IN CLEVELAND WITH OUTSIDE
CEMENT WALLS; ONLY UPPER FRONT VENEERED
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ROCK PRODUCTS.

Artistic Treatment of Concrete.

(Paper read by A. O. Elzner before the Eighth Annual Convention of the National Association of Cement Users, Chicago, January, 1907.)

The consideration of concrete from an aesthetic point of view may strike the average cement user as inappropriate and impossible, for hitherto the term "concrete" at once suggested foundations, piers, dams, abutments, and nowadays it more than likely calls to mind columns, beams, floors, walls, and in fact the entire structural parts of buildings. But it must be evident that our experience with this new material, new only, however, in the sense of adaptation, will show that like all legitimate and substantial structural materials, it too will prove to be susceptible of artistic treatment in design. Wood and stone architecture are as old as the hills, and the art of the medievalist in developing true styles with these humble materials rightfully belongs to the world wonders. Brick and terra cotta can scarcely claim quite so much distinction, although in point of artistic treatment they were brought to high development in the Gothic art of Italy. Iron and steel, however, do not fare quite so well except in a small way along the lines of purely ornamental work; for when the modern rolling mill began to turn out its product of structural shapes, and engineers discovered the wonderful possibilities of riveted sections and connections, there was a great rush for structural iron and later for steel. Everything imaginable was made of it and more so in Europe than here. Bridges and viaducts, certain classes of business blocks and public buildings, even churches and cathedrals, all vied with one another in their architecture of iron and steel, and while some notable attempts achieved a measure of success, it required many years to develop an artistic style of design. And even at this late day structural engineers as a class seem determined to ignore the application of aesthetic principles to their designs of exposed work. But we feel quite hopeful. There has been and is much teaching and preaching of aesthetics. Schools, periodicals and municipal art societies are doing much to educate the popular taste and to create a demand for beauty in public works, and this campaign, whose influence is spreading rapidly, will undoubtedly bring designers to recognize and appreciate the necessity and propriety of combining beauty with utility in all visible constructions.

This problem will be greatly simplified in concrete work, for here for the first time, we come to deal with a plastic material which can be molded and modeled at will. Beauty, however, in structural design is worthy of the name only when, like beauty in nature, it has character. It must not be a servile copy of the style peculiar to some other material, but in fact must express the individuality of its own nature and must not disseminate.

In just this particular we must be careful of our concrete block architecture. At present the tendency in the manufacture of these blocks is to imitate split faces of stone ashlar. This is radically wrong in principle and should not be tolerated. A flat, smooth face will always look well. However, if a pitched or split face is desired, let it be produced by casting the block flat and then pitching off the face with chisel and hammer just as is done with stone. The clean fracture of the concrete thus exposed will be eminently effective and artistic and will have all the merit that belongs to truthfulness. Plain concrete ashlar walls might in some cases be effectively relieved by the introduction of bands of decorated blocks with some simple ornament molded in the face, very much as is done with terra cotta. But by all means avoid molded rock faced work. It is artistically bad. The frequent and constant repetition of a few regular sizes and patterns ruins an effect which should be counted largely as accidental but always expressive of a fine artistic sense in the selection and grouping of the individual blocks. Artificiality, imitation and misrepresentation are stamped all over such work and can be recognized at first glance.

Solid concrete walls have a great advantage over the block walls in that they lend themselves much more readily to artistic treatment.

This is especially true where they are used in suburban and country buildings, perhaps because of the touch of nature in the surroundings which more nearly accords and harmonizes with the broad treatment that can be so effectively employed in wall surfaces. Perhaps the best sources of inspiration that can be had for such treatment are to be found in the old Spanish missions of California, which, al-

though not of concrete, nevertheless at once suggest its use and above all are fine examples of the artistic value of broad wall surfaces relieved by exquisitely proportioned openings judiciously spaced and not infrequently embellished by a moderate use of ornamentation.

Let us say then, speaking of domestic architecture, walls are made of solid concrete, the surfaces should be as unbroken as possible, avoiding especially artificial jointing, of which such frequent use is made, and is obtained either by scratching a joint into the fresh mortar with which the surface is plastered, or after the removal of the forms, or by planting beveled wood strips on the inner surface of the forms, thereby molding the joint directly into the concrete.

Both methods are highly objectionable, utterly senseless and aesthetically very bad and should be shunned. In work of moderate cost where effects are to be sought in an inexpensive, straightforward and natural way, there can be no offense taken if the concrete is left untouched after removing the forms. In fact this method has so much merit that it might with perfect propriety be classed as the most thoroughly artistic. That is probably just what the builders of the old Spanish missions would have done if they had had concrete to use for their buildings.

To be sure, if such treatment is to be used, some care should be exercised in the preparation of the form work, so that it will not result in the effect of a lot of patchwork.

In more pretentious work several methods of treating the exposed concrete are available.

A thin skin or crust of neat cement usually is found to cover the surface where concrete was deposited wet and was well tamped. This crust may



CONCRETE IN CLEVELAND: FIREPROOF STORAGE CO.'S SIX STORY BUILDING, FACED WITH BRICK. BUILT IN 110 DAYS.

be removed while still soft by means of a stream of water having some force, or by stiff wire brushes, in which cases the forms must be removed promptly and just as soon as the work will stand it. This, however, involves considerable danger and should be done only by thoroughly experienced persons. If successfully accomplished, the effect of the rough surface thus produced is good and consistent, for it exhibits the material in its true nature and avoids all semblance of artificiality.

This treatment, however, entails so many difficulties that it will not be very popular and it will be advisable to adopt some other simpler and safer method giving similar results. The surfaces can be tooled all over with a chisel as in some classes of stone work, but while the result may be effective, it is rather expensive and slow work and will therefore be but sparingly used. It is difficult, too, to avoid loosening an occasional pebble or stone and thus spotting the surface with objectionable blemishes, and possibly opening up some internal cavities

which are quite apt to occur and so starting a leak in the wall.

A simple and inexpensive, yet thoroughly practical method of securing an artistic effect, consists of covering the wall surface with a splatter-dash coat of cement mortar applied by splashing it on with a paddle or a broom, or better still, it may be first spread on with a trowel and then roughened by stippling with a stiff broom or brush or even a flat board, in which case the roughening is obtained by suction against the board. When such treatment as this is to be used it may be highly appropriate in some cases and indeed quite interesting to decorate parts of the surface with some simple panel work or free hand modeling. In case of panels it is best and simplest to adopt sunken work, as this can be readily produced by merely planting a board or block of desired shape against the inside face of form work which leaves its impress upon being removed from the concrete. Or else a reverse mold made of some artistic bit of carving for a panel, or over a door or window, or a frieze, etc., may be nailed against the forms, and the resulting impress will be thoroughly effective, although a much higher artistic value would be done such work if it were modeled by hand directly in the cement mortar as it is applied and before it has had a chance to harden.

This sort of work is being done extensively and successfully in Germany where the modern style of "Art Nouveau" presents abundant opportunity for endless designs. It is already finding much favor in our own country and ought to reach a high degree of development.

Moldings, especially in continuous courses, if attempted at all should be of the simplest possible design; bold, yet of moderate projection and free from small delicate members. Square offsets and beveled projections serve very well in the place of conventional moldings and rather accentuate the character of the work and heighten its effect. Dentils of fair size can be worked in to good advantage and with comparatively little difficulty. Such work should, however, be used sparingly on account of the impracticability of treating the surface of the resulting small members, unless great freedom and latitude are allowable without detriment to the artistic character of the design. It is particularly difficult to do this in case the walls are to be plastered over with cement mortar. Where this is done the work should be finished under the float rather than the trowel so as to minimize the tendency to map crack or craze, a great source of annoyance and disfigurement. Trowel finish furthermore almost invariably produces a series of blotches of different shades and textures which if introduced into rough work have much artistic value, but must be classed as nothing better than blemished in smoothed troweled surfaces. Moreover, it is extremely difficult and well nigh impossible in plastering over moldings or projecting band courses, to keep the edges straight and true as they should be in smooth finish, with the result that the poor slovenly workmanship imparts an air of cheapness and flimsiness to the building instead of the reverse—value and substance. Such, then, are some of the readier methods that can be employed in producing artistic effects with concrete. This humble material, so replete with possibilities, but as yet so little understood, is manifestly destined to take an important place in the construction of our buildings and must therefore strongly influence their design. But it means long, continuous and close observance and study of its nature, its possibilities and its limitations and if our designers will devote themselves sufficiently to this subject as it so well deserves, they will discover in concrete a new and useful friend, and with its help will evolve a new architecture, that will be full of life and character, strength and dignity and all else that goes to make up a living style.

The Cement Brick Works, of Anderson, S. C., has been incorporated with a capital stock of \$4,000.00. J. C. Cummings is president.

The Detroit Hydraulic Stone Co., of Detroit, Mich., has been incorporated with a capital stock of \$10,000.00 by R. R. Lane, C. H. Granger, G. W. Granger and F. H. Zeiger.

R. H. and C. Worthley have formed a partnership at Monterey, Minn., to manufacture concrete blocks and tile.

The Brillsford Artificial Stone and Tile Co., of Wilkesbarre, Pa., has been incorporated with a capital stock of \$100,000.00 to manufacture stone and tile.

Sand-Lime Brick

CONVENTION PROCEEDINGS.

Report of Chicago Meeting of the Sand-Lime Brick Association is Continued.

President Squier called the convention to order Friday morning, December 7, with the announcement that in his opinion the business of the session could be closed in a single session, and for the sake of getting immediately down to business, he called on E. L. Young who had prepared a paper as substitute for J. Harry Allen who failed to be present. The title of Mr. Young's paper is "The Press." It led to a spirited discussion, which consumed several hours, the value of which to the sand-lime industry is so important we have decided to withhold any sketch of it in these proceedings and give both Mr. Young's paper, together with the full text of the contributory discussion of those well qualified machinery experts in the April 22 number of ROCK PRODUCTS. As the discussion of Mr. Young's paper is the meat of the convention, parties who desire extra copies of ROCK PRODUCTS containing this discussion are hereby notified to order them in advance.

We can not provide large quantities of papers after the edition is disposed of.

The president next called on Secretary Duerr to read a letter from Professor Ira Woolson, in which he exhorted the members of the association to continue the good work of improving their products until every manufacturer would have goods that would actually stand the most rigid test, that demanded by the New York specifications. Secretary Duerr explained that any one could secure a copy of the New York specifications for building materials by writing to the bureau building of the city of New York.

The president then called for the paper of Mr. George F. Ransom.

DISCOLORATION OF BRICK.

BY G. F. RANSOM.

Our worthy secretary has assigned to me the article originally to be given by Mr. Stunstrom.

Owing to the short notice I have had my article will not be lengthy. It is said that "brevity is the soul of wit," but let me add that brevity is often the salvation of an audience.

Discoloration.—This term is somewhat misleading so I will speak both upon discoloration and upon the method of coloring brick. The discoloration takes two forms, first the white frosting that appears on brick that have been exposed to continued wetting and drying. My attention was first called to this by Mr. Plumer some months ago and I regret that I have not had more time to investigate the matter.

This white coating is due to soluble salts, such as magnesium sulphate, calcium chloride and sodium chloride contained in small quantities in the brick and brought to the surface by the water as it is leaving the brick. Upon the evaporation of the water the salt crystallizes on the surface. This process is very slow but constant and in time enough of this forms to whiten the brick on the most exposed surface. I consider this no great damage as it is easily soluble, and if the brick in the wall is exposed to the washing of rains, it can not collect. It is only on those portions exposed to the weather and protected from washing that the salts collect. These salts are in very small quantities in the brick and after once brought to the surface and washed away, either by the rains or by artificial means, will not appear again.

The only way we could avoid this trouble, if it be a trouble, would be to find whether the salt was derived from the water, the lime or the sand and use materials that do not contain these salts.

The second form of discoloration which I have noticed, is the whitewashed appearance of colored brick. This is due to the free lime in the green brick being brought to the surface by the water

upon evaporation, and can be avoided by certain methods employed in the production of colored brick, which will be treated under that head.

The coloring of sand-lime brick is a subject that has interested many and has caused considerable trouble. If we are to make colored brick we must make them as good as the white brick, and at the same time produce colors that are attractive.

I would advocate in all cases the mixing of the color with the dry material, and if possible with the sand before the lime is added. An intimate mixture is very essential in order to get the full strength of the color material.

The mixture should be pressed as wet as is consistent with making a good brick, and the brick should have their surfaces quickly dried before steaming, either by allowing them to stand in open air or by placing in a drying chamber for a few minutes. The brick should be piled on the car with the largest face down as laid in a well and a space left between the brick to allow the drying of each face.

This paper was applauded and coming as it does from the establishment, who have achieved the greatest success of record up to this time in the matter of coloring their product, is considered the best authority extant upon the subject. J. S. Palmer, chairman of the committee on membership, brought in their report. This was a signal for a general discussion involving the constitutional basis of the organization of this association. The committee took the stand that the \$30.00 assessment passed unanimously at the Detroit convention must be paid by every member of the association who intends to remain on the membership roll.

J. L. Jackson and Harry De Joannis led the opposition, their party being composed of those members who are willing to forget the assessment, and proceed with the business of the association for the future as if there had never been any financial dispute.

There was a long discussion in which nearly all of the members joined to some extent. The party in opposition to the enforcement of the collection of the assessment gained members from time to time, and the matter was finally settled by Mr. De Joannis who made a motion that the committee's report be adopted in spirit with the exception that the assessment of \$30.00 upon such members who haven't paid shall be removed from that report. He further moved that they be billed for their annual dues for they can not become members until they have paid their dues and that the assessment matter be dropped entirely. There was considerable further discussion, but after the amendment had been voted down this motion was carried. The president next called for the report of the constitution committee. Mr. Duerr as chairman of this committee, had prepared printed slips containing the amendments recommended by the committee and it was decided to read the constitution a section at a time and adopt it in this way.

The entire report of the committee was unanimously adopted with slight changes with regard to the selection of more distinct wording in several places, according to the recommendations of the committee as printed in the November 22 issue of ROCK PRODUCTS. The initiatory fee was established at \$10.00 and the annual dues at \$10.00 instead of \$5.00. This advance was made necessary to meet the expenses of the association. The secretary was allowed a salary of \$250.00 for his services and every part of the new constitution was cordially supported by every member of the association present at the convention. The white dove of harmony returned to the ark and the association is embarked upon a new era of usefulness to the industry. The president next called for the report of the committee on nomination.

L. W. Penfield, chairman of the committee, introduced his report with some well timed pleasantries concerning the work of his committee, and reported the following list of officers for the ensuing year:

President—H. O. Duerr.
Vice President—Clarke Mellen.
Secretary—Harry De Joannis.
Treasurer—William King.
Executive Committee—J. L. Jackson, George W. Boswick and W. J. Carmichael.

Of course the gentlemen nominated expressed their appreciation of this report by modestly attempting to decline, but honors will ever come to the worthy, and under a suspension of the rules the president cast one ballot and the full ticket was accordingly declared duly elected.

President Squier in turning over the gavel and vacating the chair said: "It gives me more pleasure

than I can express to hand the gavel to my friend Duerr.

"I feel, gentlemen, that you have made a wise selection. I believe the results that will be shown in this year coming and before our next convention, will be such that you will feel that you have not only done the proper thing but you have done it well. I wish to say a word for our treasurer. It is rather embarrassing for a treasurer to have a lot of bills shoved up and no money in the treasury; and that is, as I understand it, Mr. King's principal objection to serving. He is willing to do the work; he is willing to give some time to it; although he is a busy man; but it is disagreeable to have a demand made on you and you have nothing to meet it. I hope the members will be prompt in handing in their dues; so that the treasury can be immediately supplied with funds to meet the obligations that should be paid at once."

President Duerr: "Unfortunately, I have not such ability or eloquence that our former president has shown us and, consequently, I can not do him justice; and I feel that in taking his place you have bestowed an honor upon me which is exceedingly great. I do not feel that I will be able to fill the chair as he has filled it; but I will try to do the best I can. I hope that the members will support the new secretary in every way they possibly can. It is discouraging for an officer to try to do what he sees is his duty and to furthermore endeavor to do all he can to build up an association of this kind and he can not do that duty, nor can he build up, if the members will not do their part of the work. It is impossible for the secretary to have all the information at his command that is required of him if the members won't help him out. I thank you, gentlemen."

J. L. Jackson suggested that the secretary ask those members who have not paid the \$10.00 fee to do so before leaving the room in order to help out the treasurer. On motion of J. L. Jackson it was decided to give full publicity to the papers and proceedings of this association.

Clarke Mellen moved that the executive committee appropriate the sum of \$200.00 during the coming fiscal year for the purpose of carrying on such investigations as in their belief may be beneficial generally to the members of this association in the manufacture of by-products and improvements of the face brick. His motion was adopted.

The convention adjourned to meet December 4, 5 and 6, 1907 in Columbus, O.

Why Not Subsidize Railroads?

THE men who manage the great railroad systems in this country are as much behind the times as the average business man when it comes to realizing the actual expansion in all lines of manufacture. It is almost amusing to read the kind of information that has been prepared by the leaders of great American enterprises with regard to foreign trade, and the pressure that is constantly being brought to bear upon our government to pass a ship subsidy bill so as to encourage trade in all lines with foreigners. The markets of the world combined are not worth so much to us, as the American domestic market. We have never yet produced and delivered a supply of any kind of commodity equal with the demand at home, and higher prices are paid for every kind of goods at the markets of this prosperous land than any others that could be found. Before we have a ship subsidy bill, which will involve the expenditure of millions, why not devise some plan and subsidize some method to accommodate our enterprising neighbors and friends with transportation facilities from their mills and factories to the nearest market? Selah.

THE manufacturer of concrete building material finds that there is more economy in securing clean and properly graded sand and well-washed fine crushed rock than in just providing the cheapest materials that can be found. This business is rapidly getting down to a scientific and practical basis. More successful plants than we have ever had are now being conducted with the assistance of competent draughtsmen who provide for all the special designs and variations called for in actual practice in the same way that the cut stone contractor has been doing from time immemorial.

THE manufacture and sale of 50,000,000 barrels of Portland cement in the present business year is now conceded by everybody who knows anything about the situation and at the same time appreciates the forward trend of American business enterprises.

ROCK PRODUCTS.

For the Retailer.

The National Builders' Supply Association.

Meets Semi-Annually.

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Official Organ, ROCK PRODUCTS.

Dealers Short of Supplies.

The situation that confronts the builders supply dealer at the present time is a peculiar one. Very seldom at this time of the year is there any difficulty in securing the delivery of just as big a supply of cement, lime and plaster as the dealer may feel inclined to purchase. The car shortage which began as usual last fall at the period when the heavy crops of the west and the northwest had to be moved, has continued without interruption up to the present time. If there is any difference, the lack of equipment for transporting heavy merchandise is being felt more acutely now than at any time since the lack of accommodation put in its appearance at the close of last summer. A great many dealers located at important markets, have contracted for the delivery of materials. Their long delayed supplies have not yet arrived. The warehouses are empty. The materials to carry on the building operations of the country have not been distributed from the mills and the factory where they are produced so as to be within the reach of the consumer.

This is a serious condition of affairs and if relief is not promptly found, the result will certainly be a considerable curtailment of the consumption of building materials, because just as soon as the intending builder discovers that it will be impossible for him to secure the materials with which to finish his building he will put the matter off until some future time and the community will lose the value and effect of the improvement which is always at-

tendant upon any considerable building operation as well as the distribution of the money that would be spent for labor and materials.

A few of the dealers in the larger cities foresaw the present conditions and went into the market early with their orders and these parties have some considerable supplies of cement, plaster, etc., while the lesser buyers are more or less completely out of the game. The manufacturers of materials are quoting prices and they have the goods on hand. The dealer has plenty of orders from good solid consumers to begin the work of another tremendously active season in the building world, but there seems to be absolutely no chance to secure the delivery of the goods which means that the progress of the country as far as building operations are concerned is suffering a distinct hold-up on account of the inability of the railroads to take care of the traffic that is offered to them.

The next sixty days will decide whether or not a large number of big buildings shall be commenced. The smaller building jobs that are now held in the balance run away up into such big numbers as hundreds of thousands. When the factory and the mill can not secure accommodation for the movement of their product it means that thousands of consumers are prevented from getting busy at the proper time and this amounts to a direct check to the progress of the country. The dealer who has his warehouse full of cement and the other indispensable supplies is a lucky man indeed.



LAWSON MOORES, CINCINNATI, O., RETIRING PRESIDENT
OHIO BUILDERS SUPPLY ASSOCIATION.

Open Office in Detroit.

DETROIT, Mich., February 26.—The J. E. Bartlett Co., Jackson, Mich., who are recognized as the largest cement factors and distributors of building material in the state of Michigan, have opened an office in the Hodges Building, Griswold Street, Detroit. Besides being distributors for two of the largest cement mills, they control the output of several large brick plants located in Michigan and Ohio. The firm is composed of the following officers: J. E. Bartlett, president; E. J. Fogell, vice president; C. B. Elwood, treasurer; A. R. Rutledge, secretary; H. E. Morehouse, auditor.

Want to Buy Plaster.

One of the largest building supply firms in Philadelphia is that of Lukens & Yerkes, with offices in the Commonwealth Building. They operate crushers at Earnest and Rushland, Pa., quarries at Swedeland, Mill Road and Frenchtown, Pa., and lime kilns at Earnest, Pa. They are dealers in all kinds of building supplies. They are now in the market for plaster and want to buy in carloads or boats.

Will Open Watertown Branch.

WATERTOWN, N. Y., March 1.—Negotiations have just been completed whereby the Paragon Plaster Co., of Syracuse, takes over the business of the Watertown Builders' Supply Co. and will establish a branch here.

OHIO RETAILERS MEET.

Interesting Sessions Held at Second Annual Convention of Builders' Supply Association.

LEGISLATIVE COMMITTEE NAMED.

The second annual convention of the Ohio Builders Supply Association was held March 12 and 13 at the Great Northern Hotel, in Columbus. There was a representative body of delegates in attendance from every part of the state. It was a gathering of the dealers for the purpose of getting together with their competitors and talking over trade conditions so that all may have a fair understanding of the charges and costs that must be met in doing business this season, for by knowing how much it costs to do business, they can be in a position to cut out the unprofitable or unproductive part that would make losses. Several interesting papers were presented, and the discussions were participated in by nearly every one of the delegates.

It was 2 o'clock in the afternoon, when F. Lawson Moores, of Cincinnati, president of the association, called the convention to order in the assembly hall of the United Commercial Travelers Club House, which proved to be an excellent place for holding the meetings of the convention.

Secretary E. C. Kissinger, of Columbus, called the roll, and, upon invitation of President Moores, a large number of those present, who had not yet joined the association came forward and signed the constitution. The convention was formally opened when the president read his address as follows:

THE PRESIDENT'S ADDRESS.

Gentlemen: The Ohio Builders' Supply Association was organized a little more than a year ago at a meeting held at the Hotel Southern, Columbus, O. Constitutions and by-laws were adopted and officers and committees elected. During the year no matters of importance were brought before the association and I regret that no vigorous efforts were made to increase our membership. The year just past was no doubt to the great majority of builders supply dealers in the grand United States, the most prosperous; and all indications point to 1907 as far surpassing 1906; during such prosperous times, many will think associations of the nature of ours of little benefit and not worth the time of only probably one or two days twice a year, but every supply dealer in the state of Ohio can afford to attend these meetings and take advantage of the good times to educate themselves in the better methods of buying, selling and delivering their merchandise, etc.

The Ohio builders supply men are the last to fall in line; are we always to be last and remain inactive? I hope not. I am sorry that our association did not hold a mid-summer meeting last July or August at some point on the lakes like Put-In-Bay, but I trust that favorable action will be taken tomorrow for a large meeting to be held this summer. Nearly everyone of us want a few days off in the hot weather and what is better than to combine business with pleasure.

In addition to the interesting papers to be read and discussed at this meeting, we should hear from each and every one if possible, on subjects as follows: Cost of delivering and handling of lime, cost of handling cloth bags; best method of handling accounts and per cent of loss; railway rates; associated memberships and manufacturers selling direct to the contractor and consumers, as well as many other interesting topics.

What are a few of the many advantages of attending meetings of this organization? In my opinion the most important is *good fellowship*—and there has been too little of this shown in the past. I have had the pleasure of attending many meetings of lime and brick manufacturers, quarrymen, and the National Builders' Supply Association and the greatest benefit was the increased good fellowship displayed at each successive meeting. I know of cases where two or more members from one town attended their first meeting and were far from being friendly with one another, but who in a short time have seen the error of their ways and the ruinous and unfair competition is a thing of the past.

The next thing of importance is the reading of papers on subjects pertaining to our business and the free and lively discussions. The discussions and arguments following the reading of each paper will

impress more forcibly and clearly in our minds, some feature or point we think of value to our special business and we go home fully decided to make some change in the plans for the future.

You can not stay at home and read the records of our meetings and receive the same benefit; do you enjoy as much hearing some other fellow tell about the show or would you rather see it yourself?

The aspiration of this association should be to construct an organization, which shall subserve the interest of its members and be a befitting monument to the industry it represents. The object of this association should be to assist in protecting its members from unjust and injurious competition, to practice such methods as will improve and elevate the business, to cultivate the introductions and use of proper building material so that we may receive and retain the respect and confidence of our members and the general public.

Gentlemen, this organization is only a year old. A few gathered here have given us the start and are there any reasons why we should stop here and remain inactive? Let us before we adjourn, decide on the time and place for our summer meeting, which all agree to attend and you and I and each one of our present members be constituted a committee of one to bring in three or more new members before the next meeting.

Secretary Kissinger then read his annual report, which showed a healthy increase in the membership during the year, although the officers of the association have been so busy they have not been able to devote as much time to the promotion of the interests of the association as would otherwise have been done. Concluding his remarks, the secretary said: "There seems to be a greater need of a state organization today than there was a year ago, and the large attendance at this meeting goes to show that the same idea is held by a majority of those here present at least." In the report of the treasurer of the association, the bills were all reported as paid with a balance in the treasury.

In the absence of George J. Parke, secretary of the Illinois State Association, his paper was read by R. E. DoVille, of Toledo, as follows:

STATE ORGANIZATION.

G. J. PARKE.

I have been asked to address your meeting today in regard to "State Organization," and on this subject I trust you will bear with me for a few moments, as I shall not take up but a little of your valuable time, knowing from my experience of only a few weeks ago, while attending a convention of the National Builders' Supply Association in Columbus, that we had other things on hand, and did not care especially to be talked to on a subject as well known as the one allotted to me, and I kind of feel away down somewhere, that the fellow on your convention committee, that suggested to give Parke this subject, was some one that has a grudge against me. However I shall do my best in handling the matter, and trust my remarks may be accepted as intended, with malice for none and charity for all.

In state associations it appears to me that they are divided into two primary parts, first, the retail dealer and the manufacturer, and second we have the association; so I shall first take up the position of the retail dealer in building supplies, then follow with the manufacturer's position, and last, discuss the retail dealers' association.

First—The retail dealer handling building supplies: In every state, we find in the material supply trade some of our best business men, who are clear of conception and in every way broad minded, and engaged in directing the handling of large quantities of builders' supplies. These men at all times are worthy of recognition from the manufacturers and again we find the manufacturers most willing to aid such dealers in every way possible. On the other hand we find some dealers, whether engaged in handling building supplies of other commodities, very radical and socialistic, and altogether unreasonable in looking at any matter other than in their own selfish way, and in these two classes, each so different from the other, we have a proposition that is a very hard matter to handle in trying to bring about a condition that will appeal in the same manner to each respective class, and it has only been within the last few years, that we have all seen what we might consider a betterment in the building supply trade.

All of you dealers who have been engaged in business for any length of time can well remember when American Portland cements were absolutely unknown. You also remember that the only lime

that you handled was rock lime, either in bulk or barrels.

You also remember that your trade was limited to your own local town, and possibly once in a while you would have a small order from a dealer near your place, for a barrel of cement or some other item, so that altogether it has been only a few years ago that all of us were well satisfied with the conditions then existing locally.

But those days of old have changed, and the change has been very remarkable, from the fact that today we have the American Portland cements, also hard wall plaster, as well as the hydrated lime and the wood pulp wall plaster. Then again we find that demand is being made upon us for a plaster board which is a substitute for the common wood lath, and altogether along with this change, comes the demand from the consumer for each and every one of these articles, which were unknown but a short time ago, and this demand you have seen increase each year over the other, so that today the farmer in your rural district is using Portland cement as freely in his way, as the largest contractor of public works. And this condition in cement applies to the other material as well, so that we have created a condition that represents a proposition that makes it a hard matter to definitely harmonize all interests at this immediate time, and we find with the large dealers that their business has

proportion more than the small dealer, in direct competition. But on account of the volume of business in the larger places the dealers were able to get a portion of the going business, whereas the small dealer was not so fortunately situated, the demand being very limited in his small town; and if one or two consumers would order a car of building supplies, it would stock the trade which the small dealer so confidently expected to secure. The only thing that we can do as dealers is to try and overcome the obnoxious features that exist, and I believe without fear of contradiction that each and every day is bringing forth an evolution in the handling of building supplies, and better trade conditions.

The volume of business in the past few years all over the country has been very large and each and every one, both the retail dealer and the manufacturer, has fared well in this general prosperity, and none has very much to complain about when he sifts the matter to the bottom. I believe that this changing condition in the manner of handling building supplies through the proper channel has come and, in fact, is now here, so that we will have a more uniform method of doing business all along the line from now on, and the small dealer who has so recently become a carload buyer will be well satisfied in profits, if he assists a little in helping along the movement of good friendship between the manufacturer and dealer.

In the statement that has just been made, I have tried to show that the conditions such as existed only a short time ago in the material trade, are today so different in every way both to the small dealer and the large dealer as well, from the fact that the old lines of cement, lime, etc., which all of you were so well acquainted with, have changed, and in their place we have new ideas created by the manufacturer, in giving us more modern materials than we have been accustomed to in the past, and our trade has increased from a few cars of cement, lime, and plaster a few years ago, until today, we are handling many times this amount. This condition applies to every one in the supply trade, and it is now opportune and demanded in the interests of good, broad, trade ethics that the retail dealer of building supplies, should meet this increasing demand in all localities by meeting together once a year, and discussing freely, and frankly, each and every point pertaining to the material business, and harmonize the business conditions as much as possible. Every one should endeavor to meet obstacles that are presented from time to time, in a fair and just manner, as the day has gone by and absolutely forgotten when any one dealer in your state or any other, or any class or any number of dealers can get together, and formulate a plan to absolutely boycott, or create a condition that is otherwise than honorable, fair and just. I now will take up the second feature of a state association and discuss the manufacturer's end of building supplies.

Second—It goes without question, that the most important feature of the building supply line today is the marketing of Portland cement. This one feature is possibly one of the greatest manufacturing propositions we have in this country today, as all of us fully appreciate that it was only a short time ago when the only cements handled in this country were foreign Portland cements, and that the American Portland cement manufacturers were unknown. Today we have in active operation in this country nearly 100 Portland cement mills, whose product goes to all parts of the country, and at the same time a large quantity of American cement is being shipped to nearly every foreign country.

Now these manufacturers have grown from infancy to strong manhood in a most incredible space of time; from a small mill making only a few barrels a day a short time ago, whereas today they are turning out thousands of barrels of cement and the magnitude of the business is ever increasing. The unlimited demand and inquiry from every possible quarter has proved with most manufacturers that the pace is simply terrific, in fact, these manufacturers have not been able to devote much time to anything else but their own business, and have found it almost, if not, impossible to devote a moment in considering the interests of the retail dealer except as such interests were personally brought before them.

A change, however, is taking place very rapidly in this condition. The manufacturer, especially of Portland cement, is getting his business adjusted and is more able to meet today every attention and condition in the distribution of his commodity, than he was a year ago. You will find each and every one of these manufacturers good, brainy fellows, willing and eager to protect the interests of the re-



W. A. FAY, CLEVELAND; NEW PRESIDENT OF OHIO BUILDERS ASSOCIATION.

increased each year over the other, and the small dealer has grown in just the same proportion as the large one, so that today the dealer in the small town has a demand from his customers during the building season, for possibly one or more cars of cement which did not exist but a very short time ago. This demand from the consumer has placed the small dealer in a position where it is necessary to buy this class of material in carload lots, and naturally his trade being very inquisitive in reading the various journals published in the interests of building supplies, make inquiry of the manufacturer for the price on such material as they may need, and if this price is satisfactory they purchase their supplies, and the small dealer, in the absolute belief that all trade tributary to his place should be handled through his office, sees his business injured in this direct competition by the manufacturer and he will not for a moment believe that the dealers in the larger places are as seriously interfered with in the handling of their business as he is, and he looks upon the condition of marketing some classes of building supplies, as being altogether unjust and unwarranted in the manufacturer selling direct to the consumer, and this dealer becomes a socialistic element in all associations.

You will agree with me that the larger towns have in the past, been affected, just the same as the small ones in this question of selling direct to the consumer, and while each manufacturer has an absolute right to conduct his business as he may see fit, it sometimes happens, and in fact has frequently happened in the past, that the larger dealer suffered in

tail dealer of building supplies, as the manufacturer is seeking information, and on account of the limited amount of time that he can devote to this subject, you will find that he is a very attentive listener when approached, one that can make valuable suggestions. We see in nearly every convention held by distributors of building supplies, increasing attendance of the Portland cement manufacturer, the lime manufacturer, and the wall plaster manufacturers as well.

This feature only goes to show, that the manufacturer is striving to meet us by attending these conventions, and it should be your duty to encourage the attendance of all material manufacturers at these meetings, irrespective of your own personal feeling in the matter, and upon this basis of meeting together, your association as well as any other state association will accomplish in the end, much good.

Treat the manufacturer as you would like to be treated yourself, as they are all human, and do not under any condition, on account of some trifling matter, look upon the manufacturer as being a monster that wishes to devour each and every one of you, as in this policy you will be getting farther and farther away from the end that all of us wish to accomplish. The writer would be willing to pledge that if you show the manufacturer that you are a broad-minded, liberal fellow he will go you one better, and show and prove to you, that you are the one that he desires to do business with; and friendship between the manufacturer and the retail dealer is the very essence and the base rock upon which business interests must be conducted. I hold that any narrow-minded business man, who seeks to feather his own nest at the expense of others, be he a manufacturer or a dealer, will, sooner or later, find out that there are others on this earth besides himself, who have a just right to breathe at least a little of this free air, and while my discussion of the manufacturers may not meet with the views of some of you gentlemen, I am very honest in saying that in the short time that the dealers all over the country have taken up with the manufacturers, the question of distributing through the proper channels of building supplies, nothing has been accomplished for the good of the dealer, where they were not willing to meet the manufacturer even half way in a discussion.

Third—The question of an organization, association, or banding together, or whatever other term you would please to call it, of merchants, manufacturers or others, is no doubt a popular subject today with all classes, but where a number of dealers in building supplies come together, as you gentlemen have done, it is an obligation on your part that the public should know and must know, that your organization as formed is not to be looked upon as a trust, or combination of any kind, and confidence of the public in you as merchants must prevail, so that all matters discussed in any way in the interests of your business will be open at all times to the public; and as the wag says about women, so it must be with the Ohio State Builders' Association, "She needs no eulogy—she speaks for herself."

Now I wish to assure that your state association has been organized in behalf of the many dealers in Ohio—that your rights as a retail supply dealer are at times subjected to every possible annoyance, and that in an association such as you have, many of these could be better adjusted than fighting for your rights alone.

Such idea is possibly true, that many wrongs in the distribution of building supplies can be better overcome to a great extent in one way, and no other. The point that I wish now making most plain is for all members of your association to be reasonable; place your faith absolutely in the ability of the officers of your association, to handle all matters relative to your welfare in an able and honest manner, and eradicate every vestige of socialism in your organization of those members who will not join with you unless they have an imaginary grievance, and simply wish to use your association in their own selfish way, and join your association with the intent of having a particular manufacturer or manufacturer's agent whom they hastily blame for everything, wiped off the face of the earth.

Let your officers take up at all times any troubles if such exist locally in your state, and decide what complaints that you as members make to them are reasonable, and what complaints are not reasonable, and those that are just should be placed before the one complained of in a frank, honest manner, and let the one complained of tell his side of the story and seek in every way possible in good solid friendship, to overcome the many troubles that every deal-

er in the past has more or less experienced. I make the statement here without fear of contradiction that it is the policy, the intent, and the one desire of the manufacturer to be reasonable and fair with the retail dealer, irrespective of any organization, and at the same time the retail dealer must be just the same towards the manufacturer, as it often happens that a condition is created of dissatisfaction on the part of the retail dealer, which the manufacturer is not aware of, and my experience has been that they are ever ready and willing to take up any matter in a reasonable way, though at times when first approached they are anything but friendly, on account of having met the socialistic element among retail dealers or had been insulted by committees from dealers' associations similar to the one that you belong to, and for that reason they are not in a position to look upon a matter as presented without some degree of suspicion.

Now let us look a little further into a state organization as it appears at this time. You have your association. Connecticut has hers, another good one exists in New Jersey, also in New York, and Illinois as well. Would it not be a good plan for the secretaries of these existing state organizations to have their association? This is simply an inquiry on my part, and again there is another thought that I believe most feasible, in asking if we could not merge each state association into the National Builders' Supply Association, and by so doing form in one solid body an organization by having in each state such representation on the proper committee

President Moores propounded as a question for discussion, "What does it cost to handle bulk lime?" In explanation he said: "I am an extensive manufacturer of lime and up to this time it has only been a question of meeting the price. Every team including the driver's wages costs us \$5.00 a day. Such a team will haul an average of 125 bushels of lime as a day's work. Upon this basis the actual cost of hauling lime is 4 cents a bushel. We have sold lime in Cincinnati, delivered, as low as 14 or 15 cents a bushel, and we know that we lost money. Another question I would like to throw out for your discussion, 'What does it cost to handle cotton sacks where they are returned for credit?' It has been our experience that the losses from shortage of returns has been considerable."

Valentine Rice, of Chillicothe: "We pay 18 cents a bushel for lump lime and have sold it as low as 20 cents. We have found that every car is short in weight when we take the trouble to weigh the cars in. My business in lump lime has always been a disappointment. I only handle paper sacks, don't have anything to do with jute sacks, because they will never return them and the loss of a few sacks will do away with all the profit in the lime. There are four dealers in Chillicothe, and the competition takes nearly all the profit out of the business. I have known some cars of lime to be as much as fifty bushels short."

George H. Gengnagel, Dayton: "We get 22 cents a bushel for local lime in Dayton, and 20 cents for shipped lime. In my opinion we can handle jute bags more cheaply than paper bags. We charge 40 cents over the bulk price for jute bags, and then pay 30 cents for the bags when returned."

F. Lawson Moores, Cincinnati: "We sell lime at \$2.00 in paper, and \$2.30 in jute bags in Cincinnati."

E. C. Kissinger, Columbus: "I have measured lime for several years, and found that average shortage of all the cars measured to be thirty-five bushels a car. I never knew it to fail that cloth bags are an actual loss at the end of the year."

W. A. Fay, Cleveland: "I know of dealers who make a practice of discounting the whole bill for cement including the bag."

F. Lawson Moores, Cincinnati: "I believe that the builders supply dealers are the only business men in this age who have no clear idea of what they are doing. Few, if any of us, take into consideration the cost of handling the contractors' accounts; and the percentage of loss, which is sometimes great, is just overlooked in the pressure of business, and we make it up in some way, without really knowing where we lost the money or where we got it back again."

T. T. Van Swearingen, Columbus: "In the lumber association, of which I have been a member for some time, they have their system of figuring costs a thousand feet on the business done, down to a fine point. As soon as the association succeeded in getting this system promulgated, the lumber dealers realized what it really meant, and since that time there has been no trouble to get them to keep up the price."

Frank Hunter, Columbus: "This matter suggested by the president is important. Our method of obtaining the cost is to keep an account with each material and charge the material up with the money used in that particular material. Keep an account of the salesman's costs. Keep a general cost covering all items that are not otherwise taken care of, and divide this proportionately with the different materials, and add to each material its proportion of the general cost in this way. It is easy to see the initial cost of the materials we handle, but these unseen costs that are accumulating all the time is the thing we are after. The cost of the material plus the cost of doing business is the actual cost price."

F. Lawson Moores, Cincinnati: "There is no use for us as business men trying to fool ourselves. The wagons wear out; the horses deteriorate in value. We make a practice of charging off \$50.00 a year on the value of each one of our \$300.00 wagons. I am not sure that is enough, for a wagon that is used steadily for six years is not running on the original \$300.00 worth by any means, but is usually sustained and kept in commission by reason of the repair bill that has been continuously going into it as an additional investment. I understand that Mr. Hunter and Mr. Ferris of this city have found it profitable to conduct a blacksmith shop. Horse shoeing is a considerable expense when you take into consideration the cost of the delay of the team while they are waiting at the blacksmith shop."

F. C. Ferris, Columbus: "Our private blacksmith shop has paid us well, and I advise any dealer who has a sufficient number of horses at work, to put in a shop."

E. C. Kissinger moved that the Ohio Builders' Supply Association, hold a July meeting at some



D. K. THOMPSON, SECRETARY OHIO BUILDERS' SUPPLY ASSOCIATION.

of the national association as would be proper. It would insure to each and every one of us now members of state associations more than we could reasonably expect from our own state organization. I simply bring this before you gentlemen, in the hope that all of the several state associations will think over this plan and in the near future I hope that it may be an accomplished fact.

As all state associations are formed now along the same lines as the parent organization, which is the National Builders' Supply Association, then why can not we merge all into one and not have each and every association individually trying to overcome alone the obstacles we each have been striving for? So far as I am individually concerned, this idea of consolidation appeals to me very strongly, as each and every state now organized would preserve this individual interest if in the National Builders' Supply Association. Then again, the national association would be made stronger and more able to carry out definite plans, which in a short time would prove a benefit to all, and I sincerely hope that your association will take up this matter in your present meeting and thoroughly discuss it.

This paper was discussed briefly by E. C. Kissinger and Frank Hunter, who said in speaking on the state association idea, "What is good to make a broader and higher plane for the whole business is good for every one who participates in the movement."

point on Lake Erie, both the time and place to be fixed by the executive committee, and his motion was carried.

On motion, the president appointed the following gentlemen to a committee to nominate officers for the coming year: Geo. H. Gengnagel, T. H. Holland, and A. P. Black.

President Moores brought up the freight rate question, saying that he understood that it was generally announced that the railroads intended to raise the rates on the classes of freight in which the supply dealers are interested about April 1 or May 1.

Valentine Rice, Chillicothe: "I think the agitation about raising freight rates is a retaliation on the part of the railroads on account of the reduction of passenger rates. I think it would have been much better to have left the passenger rates alone and to have secured a reduction in freight rates in the first place, because the freight rate affects the general public much more than the cost of a passenger fare."

Frank Hunter, Columbus: "The freight rate is not really any affair of the dealer. It is not anything for us to take into consideration. We are bound to pass it on to the consumer, because it means that much more cost of the material transported to us, and our price to the consumer must be based upon our cost."

H. F. Rauch, Columbus: "As representative of the Whitehall Portland Cement Co., in this district, I have been advised that the new freight rate goes into effect May 1, and it will amount to about 4 cents a barrel on Portland cement."

T. H. Holland, Cleveland: "What Mr. Rauch has said is exactly correct with regard to Portland cement, but there is no advance in the freight rate on lime as I understand it."

E. C. Kissinger moved that the chair appoint a committee of three on freight matters to look after the interests of this association with regard to freight rates and car service charges, and the motion was carried.

The convention adjourned until 10 o'clock in the morning and the president announced a theatre party tendered to the guests and visitors by the Columbus local committee at Kieth's Theatre, where a fine vaudeville bill was on.

The Theater Party.

It was raining from the time the convention was first called to order, but the supply dealers paid no attention to the weather. As soon as supper was over, they repaired to Kieth's Theatre in a body, and enjoyed a delightful evening. There never was a convention of supply dealers where so much good fellowship prevailed.

SECOND DAY'S SESSION.

The president called the meeting to order promptly. It was still raining outside, so all the delegates were promptly in their places. Peter Martin could not be present, but he deputized George W. Christian, Jr., of Marion, to read the paper that he had prepared upon the subject of "Hydrated Lime" which appears upon page 33 of this number.

The paper brought forth a discussion in which Messrs. Moores, Christian, Holland and Gengnagel participated, bringing forth many important points with regard to hydrated lime.

The president then called on Frank Hunter for his paper as follows:

LOCAL ASSOCIATIONS.

BY FRANK HUNTER.

The good derived from local builders supply associations depends very much upon the plane upon which they are conducted. Like every other successful business affair, its business must be conducted intelligently, conservatively, and industriously, with honesty underlying its foundation. Its principles should be obedience to law, its rules should be consistent with good business principles, and integrity and confidence in its associates should govern every act. The absence of any of these principles will throw the organization out of balance and destroy its usefulness.

Can a local organization of men engaged in the builders supply business be formed on the principles above stated; an organization that will result in good to the interests involved? The writer of this paper maintains that it can. There seems to be a perverted idea abroad in the minds of some people that to combine kindred interests through any sort of an association is in violation of the law. This is not true. If associations be formed, although they may have a selfish purpose and if their rules of conduct are true and business like, and not in violation of law, they can have no bad effects. It is true that some organizations do unlawful things. It is also true that some individuals apart from organizations do unlawful acts, but it does not necessarily follow that all organizations and individuals are guilty.

A commercial organization that has for its purpose the control of any commodity of general usefulness in order to fix prices, and violate the natural law of supply and demand is unlawful, but an organization of business men engaged in kindred interests, may meet and organize and be of great benefit to each other, and yet not violate the law. Kindred interests encounter kindred obstacles, and

kindred obstacles can be more successfully overcome by united forces.

I am reminded of the simple story told of an old father who felt that he was about to die, and called about him his sons to receive from him his fatherly advice, and among other things borne out by his long life of experience, he said that they should always be united, not wrangle or quarrel, but should counsel with each other in all things of common interest, making a common cause. To illustrate his philosophy, he had gathered together a number of small sticks, and handing one to each of his sons, he bade them to break them, which they did without difficulty. He then gathered together a bundle of similar sticks which he bade them to break, but this they found impossible.

We can be and are imposed upon, and the same obstacle that confronts one of us in the supply business, is found on investigation to confront us all. Our interests along this line can be regarded as common interests. Owing to the character and volume of business done by builders supply companies, they have of necessity, to do to a large extent with railway companies, and in the present mad rush for business, the railroads are forced to undertake to do more than their capacity, in fact it seems almost impossible for the railroads at the present time to be able to keep in repair their equipment, and furnish additional equipment to meet the increased demands of business. The most important and urgent demands are granted.

To get anything like satisfactory service takes the united power of interests engaged in kindred occupations to influence the railroads to have a more active regard for their business. Prompt and satisfactory service on the part of railroads is of vast importance to our business. The organized and united forces that can be applied to advantage in securing from this mammoth institution that handles our freight better accommodations are of great value to all of us. It means money.

A committee representing a number of supply companies can have more influence with the railroad officials in getting these accommodations, than any one company or individual standing alone. Such committees can only emanate from organized bodies, and without so emanating can have but little force.

There are many other common interests that affect our successes, especially along the lines of municipal affairs, among which I might mention streets, alleys and driveways, taxes, insurance and water rents, and in fact many other public utilities, pertaining to which only committees duly authorized, can have weight and influence.

There are other matters aside from those mentioned that affect each individual or company en-



OHIO BUILDERS' SUPPLY DEALERS VISIT QUARRY OF CASPARIS STONE CO., COLUMBUS, OHIO.

ROCK PRODUCTS.

gaged in the supply business. Let me call your attention to one delicate but very important matter that is of universal interest, and that is the unworthy creditor; he who goes from one supply house to another securing credit unworthily, and is not found out until he has beaten all the supply companies within a radius of his operations. From my experience in the supply business, I have found there are two distinct classes of unworthy creditors. This discovery may be of interest to you, and as I am trying to prove that we have a common interest at stake, I think it worthy of note. The first class of unworthy creditors are those oily tongued fellows who talk you into giving credit, but never intend, if they can help it, to pay. He has misled you by his manner and plausible statements, until he has obtained your goods. The other class that I have discovered, follows this plan: On his first bill of goods he pays promptly, then he pays again in part, with the excuse that he will settle in full in a very short time. By that transaction he has you in his power. You trust him on for fear he won't pay the balance, until his bill gets so large, and no payment in sight, that you are compelled to shut down. Then he takes the profits he has made off your material, and goes to the next supply house, and with a great flourish pays spot cash for his first order, and possibly for the second, then a part of the third, leaving a balance which he promises to pay in a short time. By this method he compels the second supply house to trust him, as in the instance with the first dealer, and not knowing the experience of his fellow dealer, he trusts him again until the bill gets so large that he is forced to extend him no further credit. On he goes to the third dealer, and so on around the circle, and when he has exhausted his credit with all, he commences over again at the place he first started. A plausible story is generally told as to how he has had hard luck, sickness, etc., and ends up by paying every cent of his balance that has stood upon your books, and will commence again by paying for his orders in cash. He may do this for several times, but will finally get into you again as far as you will let him, and when you have refused him the second time for more credit, he leaves you, and begins his rounds again, leaving a larger balance due you than before. In this way this class of unworthy creditors will beat you, and beat you bad.

By having in every city and town in the state an organization that is conducted along legal and business lines, we would be enabled to discover the methods of this unworthy creditor, and save the builders supply people vast sums of money, which would tend to establish a better business principle, which will not only protect our own business, but also protect honest contractors against the competition of men who do not expect to make profits from their meritorious work, but by beating the supply men out of the cost of the material used.

I now come to the most important common interest to us in Ohio, who are engaged in the building supply business, and that is the Lien Law, and the securing of the passage of laws that will better protect our interests. The Bankers Association, the association of building and loan companies, the credit men's association, are examples of what spirited and active co-operation can do. By co-operating and bringing united efforts to bear upon the legislature, they have not only secured the passage of laws beneficial to their particular line of business, but they have also prevented the passage of laws which were unapplicable to their welfare. Each local association by healthy agitation, can convince the representative from its country or district, of the wisdom or folly of enacting certain laws. What one can do, two can do more effectually, and an association of men engaged in kindred business in each county in the state can reach each representative in the state, and argue the case with their representative, so that the members of the legislature may be informed of the good or bad of certain laws. In this way the builders supply interests may be protected at all times.

It will not do to say that we do not need legislation for the builders supply interests. There is scarcely any class of business so exposed to the practices of the dishonest creditor. I might say at a conservative estimate that seventy-five per cent of our sales are to some persons other than the owner of the property, such as the contractor, subcontractor, and even the subcontractor of the subcontractor. Of course where sales are made to the owner, we are protected, and perhaps fully protected by the mechanics lien law, but where we sell to the contractor, we are afforded practically no protection whatever by a subcontractor's lien. In other words seventy five per cent of our sales are exposed to loss by insolvency of the contractor and collusion with the owner.

I understand that our subcontractor's lien law has

been amended so many times, and has been so ridiculed by decisions of the Supreme Court, that it has become inoperative. Judges do not agree as to its extent and lawyers have but little confidence in its constitutionality. As a result it is a very weak weapon for us in the supply business.

Now all supply men, all material men, and all lawyers agree that the law should be amended and made practical and effective. We are unanimous upon the proposition. Other states have effective subcontractor's lien laws. Why shouldn't we? If any other important line of business was so much in need of legislation as we are of the lien law, they would besiege the legislature daily until they got what they wanted. Besides we could unite with other lines of business, such as lumber dealers, builders mill work, etc., who make the same use of mechanics lien laws as we do, and we could then bring a powerful influence to bear in behalf of a just cause. This I maintain is a very important feature of co-operation which has been neglected, but which with proper attention could be made most beneficial to our line of business.

In conclusion I would most earnestly recommend to the members of the state association that they at this meeting, appoint a standing committee of at least five members to be known as the law committee, whose special duty during the coming year shall be to make plans and perfect a state organization, not only among builders supply companies, and individuals engaged in the supply business, but also securing the co-operation of all other commercial interests that are similarly affected by the present lien laws. Secure competent legal advice to draft a bill embodying such laws as may justly protect material dealers in the sales of their merchandise. A fund should be started at once for this purpose and active work begun.

This paper was the keynote of the convention, concentrating as it does the entire discussion of the meeting and reducing the desires expressed by every speaker into a concise form for action. It was heartily received and met with the approval of every man present.

On motion of F. P. Childs, of New Lexington, the chairman was instructed to appoint a committee of five on legislation to carry out the suggestions contained in Mr. Hunter's paper. On suggestion of George H. Gengnagel, this committee was further instructed to co-operate with like committees appointed by similar associations.

President Moores decided that he would leave the appointment of this committee as well as the one on railroad matters, to his successor.

A voluntary subscription was raised for the purpose of defraying the expenses of the legislative committee.

T. H. Holland, of Cleveland, of the nominating committee announced the following nominees:

W. A. Fay, Cleveland; President.
W. S. Hawthorn, Dayton; First Vice-President.
W. O. Maddox, Zenia; Second Vice-President.
M. J. Haldon, Third Vice-President.
A. J. Schneider, Springfield; Fourth Vice-President.
E. C. Kissinger, Columbus; Fifth Vice-President.
D. K. Thompson, Jr., 318 W. 9th Ave., Columbus, Ohio; Secretary.

R. E. DoVille, Toledo; Treasurer.
J. W. Thompson and J. W. Wise, members of the executive committee to serve for two years.

On motion of Charles Frank, Columbus, the rules were suspended and the full ticket was elected by acclamation.

The newly elected president, W. A. Fay, then assumed the chair and announced the committees as follows:

Committee on railroad matters: E. C. Kissinger, Columbus; George H. Junod, Athens, and W. S. Hawthorn, Dayton.

Committee on legislation: Frank Hunter, Columbus; F. Lawson Moores, Cincinnati; George H. Gengnagel, Dayton; R. E. DoVille, Toledo; C. F. Miller, Cleveland.

The convention then adjourned *sine die*, but subject to the call of the executive committee.

VISITING BIG QUARRY.

When the Ohio Builders' Supply Association adjourned about 2:30 o'clock, March 13, it was still raining, and it was a first class wet rain. Scioto river rose out of its banks in a few hours and almost divided the city of Columbus into two parts. Our good friend, "Bill" Taylor, of the Casparis Stone Co., had extended an invitation to the visitors to come out to the great quarries and view the extensive equipment of crushers and quarrying operations. Frank Ferris, Frank Hunter and Archie

(Continued on page 58.)

NEW JERSEY RETAILERS.

Mason Material Dealers Hold an Interesting Session in City of Newark.

GOOD FELLOWSHIP PREVAILS.

The Mason Material Dealers' Association of New Jersey held their third annual meeting at Achtel-Stetter's in Newark Thursday, March 14. The meeting was called to order in the large hall on second floor at 11:30 a. m., by the vice president, Charles Agnew, of Paterson, the president, Geo. W. Tomkins, of Newark, being absent in Europe. Secretary Jas. M. Reilly, of Newark, called the roll and the following members and associate members were present:

ATTENDANCE.

Buchanan & Smock Lumber Co., Asbury Park; Conkling Lumber Co., Basking Ridge; Ogden & Cadmus, Bloomfield; Henry Salmon & Sons, Boonton; Edward Riggs, Jr., Burlington; Dover Lumber Co., Dover; J. & S. S. Thompson, Neureiter & Hoore, Mulford Coal and Lumber Co., Elizabeth; James T. Pierson & Co., East Orange; David Dumont, Far Hills; Hackensack Coal and Lumber Co., Hackensack; Charles S. Schultz, Jacob Vanderbilt, Hoboken; E. M. Osmon's Son, Hackettstown; J. P. Hall, Edward W. Conlon, Jersey City; Edwards Coal and Lumber Co., Long Branch; C. W. Ennis & Co., Morristown; William O. Persons, Montclair; Wolf Stewart & Co., Cook & Genung, Henry E. Ogden, Marcus Sayre & Co., Tomkins Bros., Frederick Bowden, John H. Rolfe, Newark; Campbell Morell & Co., Passaic; John Agnew, Paterson; J. D. Loizeaux Lumber Co., Plainfield; Bolton & Sesson, Perth Amboy; Brewster & Son, Ridgewood Park; Edwin T. Galloway, Rutherford; Smith-Schoonmaker Co., Somerville; H. B. Halsey & Co., South Orange; Clayton & Pierson, South River; Edwin Demarest, Tenafly; Osborne & Marseilles Co., Upper Montclair; Slayback Bros., Verona; Kimball, Prince & Co., Vineland.

The following associate members were present: Homan & Puddington, J. B. King & Co., The Robinson Product Co., of New York; Rock Plaster Co., New York City; Clinton Metallic Paint Co., Clinton, N. Y.; Windsor Lime Co., New Jersey Lime Co., Hamburg, N. J.; Whitehall Portland Cement Co., Philadelphia, Pa.; Charles Warner & Co., Wilmington, Del.; Palmer Lime & Cement Co., New York City; B. F. Lippold, ROCK PRODUCTS, Louisville, Ky.

It was by far the largest attendance present at any of the meetings and showed the immense interest in the association work. Expressions were heard on all sides that in their opinion they ought to meet oftener than once a year as there is always so much business to transact that the meetings are often hurried and some of the members are not given a chance to speak. Mr. Agnew congratulated the members upon the progress they had made and spoke about the vast amount of good the association had already accomplished and what was before them.

The committee on nominations made its report which was adopted. The committee is as follows: Chairman, George A. Smock, Asbury Park; J. M. Campbell, Passaic, and Ambrose Tomkins, of Newark.

Following are the new officers elected to serve during the year:

President—Walter C. Schultz, Hoboken.

Vice President—Charles Agnew, Paterson; J. C. Richardson, Trenton.

Treasurer—Horace P. Cook, Newark.

Secretary—James M. Reilly, Newark.

Board of Trustees—Henry N. Sayre, Newark; Geo. F. Barrett, Atlantic City; J. M. Campbell, Passaic; P. M. Welsh, New Brunswick; T. M. Brewster, Ridgewood Park; George A. Smock, Asbury Park; Willis Pierson, East Orange; M. P. Stephens, Summit; Ambrose Tomkins, Newark; Daniel Edwards, Long Branch; E. L. R. Cadmus, Bloomfield; Selah Schoonmaker, Somerville; George W. Horre, Elizabeth; M. F. Ellis, Basking Ridge; W. C. Salmon, Boonton; J. D. Loizeaux, Plainfield; Horace S. Osborne, Upper Montclair; Amos G. Bolton, Perth Amboy.

The newly elected president, Walter C. Schultz, was escorted to the chair amid great applause. Mr. Schultz is a man of few words and did not make a speech. He thanked the members, however, for the compliment and promised to serve them to the best of his ability. He then called for the report of the board of directors which was read by the secretary as follows:

REPORT OF THE BOARD OF TRUSTEES.

When the association adjourned one year ago it was with a feeling on the part of the majority of members that substantial progress had been made in advancing the principle that the trade of the consumer should belong to the retail dealer and should not be subject to any other competition except that which exists between local retailers.

There is no question in the mind of any member of your board of trustees but what conditions have improved, and that the majority of manufacturers are more disposed to consider the position of the retail dealers and to afford protection to them.

Cases have been reported by individual members where consumers have applied for prices, that the manufacturer had referred such inquiries to the local dealer, and in other ways have endeavored to conform to the request which has been made through this association.

In one instance where a sale had been made direct to a consumer, the representative of the company appeared before the board of trustees, and after a discussion on the merits of the case, voluntarily agreed that the sale complained against was not in conformity with the rules established, calling upon manufacturers and wholesalers, when quoting prices to consumers, to allow a margin of ten cents per barrel over the price quoted to the local dealer, and in settlement of this complaint, a check was deposited with the board of trustees covering the percentage stated, and giving assurance that future sales would not be made except as provided in our rules.

This one transaction would indicate that the work which we have set out to accomplish is being recognized, and that in time the objects of the association are going to be accepted in the trade and lived up to.

In the last annual report which we presented, it was shown that our combined strength was not considered sufficient to commence a radical plan of procedure, such as the reporting or listing of a manufacturer or wholesale dealer who refused to accept or to be governed by any set of rules, and it was proposed that an effort should be made during the year to effect an organization with the New York and Connecticut associations. To accomplish this purpose a special committee was appointed, and through this committee, after considerable labor and several meetings, a joint association, to be known as The Eastern States Mason Material Dealers' Association, has been organized and incorporated under the laws of the State of New York.

Through this association it is planned to take up all questions concerning irregular shipments with the manufacturer or wholesale dealer, and if a satisfactory adjustment can not be secured under pledge or promise to protect the retail dealer in his trade, a bulletin containing the name or names of such wholesalers or manufacturers will be published at regular intervals, and the name of such offenders sent to all members of the different associations.

At a meeting of representatives from each of the associations, recently held in New York City, after a thorough discussion of existing conditions, it was agreed to use moral persuasion with the principal manufacturers, rather than to force a quarrel by ordering their names reported. A conciliatory line of action appealed to the majority in preference to an aggressive one, for the reason that the members felt it would not be wise to commence an attack upon any one of the large companies, who have refused to be governed by any rules up to the present time. One and all in reporting their experiences expressed themselves as being impressed with the idea that each of the companies in one way or another had shown a disposition to curtail their active solicitation of orders from consumers, and in other ways giving proof that the wishes of the association were being recognized and would eventually be carried out.

There will be laid before you today a preamble and resolution which was presented at the meeting referred to and referred back to each association for consideration and action.

The control of the cement situation of course is the principal work before the association and at the same time it is the most difficult.

From responses received to the request sent out

by the secretary asking members to report trade conditions, it would appear as if members were generally satisfied with what has been accomplished; at the same time several of the members report that a very active competition has existed in their districts on the part of the cement manufacturers in accepting and filling orders from cement block manufacturers.

This question is one which has been discussed at length in meetings of the trustees, but beyond taking a stand as against recognizing such manufacturers as legitimate trade your board has not been able to decide upon a definite plan of action, and feel that this matter must be allowed to work itself out until we can feel assured that the manufacturer and wholesaler will pledge themselves not to solicit or to sell to the consuming trade.

In so far as our association rules apply to materials other than cement and brick, we have received no complaint from any dealer and it would appear as if the majority at least of manufacturers and jobbers are living up and keeping within the rules which we have established.

Your board, through the secretary, has used every effort possible to increase the membership of the association by the issuing of letters setting forth the aim and purposes of the association and giving substantial reasons for dealers to co-operate with us; as through an increase in membership only can we expect to exert a sufficient influence to remedy these conditions. While it has resulted in a measure of success there is nevertheless a large percentage of the dealers in masons' materials in different parts of the state who have not responded, and an appeal is made to you to individually make this a matter of business and urge your nearest neighbor in the business to come in and join with us.

We are glad to report that the dealers in Connecticut have advanced the work of their association and are alive to the importance of urging upon all manufacturers with whom they deal to recognize the right of the retail dealer to the trade of the consumer. They have succeeded in securing a pledge from the Alpha Co. not to sell to consumers and to have them take up associate membership as well, which is more than we have been able to do with this particular company, and we anticipate with the plan of co-operation between the state associations that the Alpha will have to mend its policy in this state if they wish to retain the good will of the dealers whose trade they value in Connecticut. No doubt other companies will find themselves in a similar position and sooner or later each one of them will find themselves in a position to fish, cut bait, or go ashore.

What we must do is to hold together and to advocate the principle that we have adopted, and by combining the influence of the dealers in Connecticut, in Westchester county, N. Y., the Metropolitan district, and New Jersey, the day is not far distant when we will be in a position to make a stand against any company who refuses to recognize reasonable regulations in the trade.

This combination of interests with the associations named will surely exert a powerful influence, as each member in any one of these associations is practically a member of all, and where the influence of the local association is not sufficient to correct an evil or to stop an abuse, we hope the combined influence will accomplish it.

Your board could wish that every member of the association would follow a policy pursued by one of our dealers, as shown in a reply made to a manufacturer, who offered a small percentage for the use of the dealer's name to cover a shipment to a consumer to a point outside of his district. This letter we wish to submit to you as follows:

"Dear Sir—Your proposition for us to assume the ownership of car or cars to be billed to us, but really for your use and benefit, we to assume this responsibility in consideration of a percentage of profit, for the use of our name, has been referred to me. We could not entertain such a proposition for a moment. We do not consider the prices of materials at the retail yards as any more than fair compensation for the expense and risk of such business, and whether we are the party to be hit or not, we can see no advantage to us in such methods of dealing. If we are running a yard simply to furnish pick up lots too small to be got in any other way, then our prices are too low for such business, and if not we certainly would be foolish to indulge in cutting our own or anybody else's throat."

One of the greatest evils that has crept into the lumber trade in recent years is that of poaching, or, in other words, one dealer cutting into the trade of a neighbor by selling in carload lots on a

commission or percentage basis, destroying what would otherwise remain as profitable trade.

We are glad to learn that the Lumber Dealers' Association are fore-handed in taking hold of this abuse and that they have hit upon a plan which will put a stop to this unprofitable business.

In our line we should, one and all, realize that if such an abuse was encouraged it would eventually lead to the most unprofitable condition. It is safe to assume that what happens in one man's territory today will happen in our own tomorrow, and it should be a part of our policy to guard against such a condition starting.

No doubt in the course of the discussion which will take place at our meeting, individual members will be able to represent wherein the work of the association has resulted in financial profit to them, and show in more than one way that it has conserved trade.

In the formation of a local association, brought about through the influence of the association, the dealers in the city of Newark and vicinity have adjusted many difficulties which have been the source of annoyance and unprofitable conditions. By getting together once a week these dealers have fostered a spirit of good fellowship, through which they have succeeded in making their trade more profitable.

The formation of local associations is in line with the spirit of the association and members can not do better work than by getting together to talk over trade affairs, to adjust differences, and to harmonize their interests, so as bring about better financial results, in so doing they add to their own profit and appreciate more fully the value of association work.

In bulletin No. 5, issued with the call of the meeting, a general statement of affairs was given, making it unnecessary for your board to enter further into detail.

In closing we urge members to maintain an interest in the association, to encourage the work of your officers, and to continue to impress upon all manufacturers with whom you place orders the necessity of their protecting your trade from active competition.

We must all realize that any reform worth asking for can not be obtained without agitation and discussion, and we must expect a certain amount of friction and antagonism to proposed measures; while on the other hand, when once secured we may hope that the benefits which follow will be lasting when finally accomplished.

We have reason to believe that during the coming year the influence of this association is going to be recognized, and that every material dealer in this state will experience a direct benefit as a result.

The report elicited quite a general discussion and the board was given a vote of thanks by the entire association for the able manner in which they had conducted the affairs of the association during the past year. There are many points in the report and the members expressed themselves as highly pleased at the progress that has been made in the short space of time the association has been in existence. Several of the members spoke of the benefits which were already apparent and spoke sanguinely of the future.

John M. Campbell, of Passaic, chairman of the committee on trade relations, made a verbal report which was listened to with interest by the members. This report showed that trade relations had been much improved since the inception of the association, and that there was still room for further improvement in that line. This report was one of the best of the meeting and it is sincerely to be regretted that Mr. Campbell did not make a typewritten copy of it so it could be read by every member of the association.

J. C. Richardson, of Trenton, chairman of the special committee on Revision of Lien Law, made the following report:

REVISION OF LIEN LAW.

To the Mason Material Dealers' Association of New Jersey: At the last annual meeting following a discussion on the question of securing amendments to the lien law, a committee was appointed to cooperate with a similar committee from the State Lumbermen's Association.

We can report that several meetings were held during the year and a plan determined upon, which unfortunately became involved through the failure in business of the chairman of the joint committee, and valuable time was lost before his resignation was received and a new chairman appointed.

At the expense of the joint committee a circular was issued to dealers submitting the views of the

ROCK PRODUCTS.

committee and calling for small contributions to create a fund to defray the cost of necessary legal expenses, etc. Counsel that had been engaged by the chairman referred to, who had in charge the drafting of the amendments to the present lien law, accepted a position with the Erie Railroad Co. and his time was so fully occupied that the committee was unable to secure any results through his employment, and with the opening of the legislature this matter was taken up and a canvass made among dealers to ascertain in what respects the lien law should be amended, but for some reason unknown to your committee no one dealer seemed to be able or willing to point wherein the law should be amended.

We have been working with the assistance of Henry H. Dawson, Esq., a lawyer who has had considerable experience with the present law and a thorough knowledge of its features.

At the suggestion of our committee Mr. Dawson has made a study of the Missouri, Kansas and Oklahoma lien laws, and he believes that by incorporating a feature taken from the Missouri law ample protection can be provided and your committee have requested Mr. Dawson to attend today's meeting to present to you a synopsis of what the present law provides and explain the amendment proposed. He would also be glad to hear the views of each member and to receive any suggestions that may be offered.

The proposed amendment can be shaped up and a bill introduced during the coming week, but as the session of the legislature is rapidly drawing to a close, if we are to secure its passage, it must be with the active support and co-operation of every individual dealer.

Each one must take it on himself to see his representatives and senator and urge upon them the necessity for the passage of this measure when introduced.

We submit this as our report and will be glad to receive further instructions.

Following this report Henry H. Dawson, who has been working in conjunction with the committee, spoke at length on the subject of lien laws. He contrasted the laws of the various states and showed where he thought the New Jersey law could be materially improved. Several of the members offered suggestions and others asked questions, with the result that the subject was pretty generally threshed out. Finally a motion prevailed to refer the whole matter back to the committee with full power to act. They will at once prepare a modified bill in such a form that there is some likelihood of its being passed and present the matter at once to the present legislature. It was also suggested that all dealers present use their influence with their individual representatives and try to induce them to support the measure. The new act will embody many of the salient features of other laws on the same subject and yet will not be of such a radical nature as to meet with opposition from other interests.

The report of the treasurer, Horace P. Cook, of Newark, showed the association to be in a flourishing condition with sufficient funds in the treasury to carry on the good work which they have begun.

The report was adopted and the treasurer given a vote of thanks for the very able manner in which he has handled the financial affairs of the association. The following new members were elected: Perrine and Buckelew, Jamesburg; Washburn Bros. Co., Jersey City; Consumers Coal and Supply Co., Asbury Park; Oberman Brick and Supply Co., Newark.

The next order of business was the report of the committee on car demurrage, by W. C. Cabell, chairman of the committee. This was one of the most interesting reports presented. Mr. Cabell was largely instrumental in framing the two bills covering the subject which are now before the state legislature, and which from all reports, have an excellent chance of passing and eventually becoming laws. In bringing this matter before the legislature so as not to meet with opposition from other interests the committee conceded several points, and embodied some changes which were calculated to appease the warring elements, all clamoring for the same kind of bill, but each with different ideas. These bills are almost sure to pass, but Mr. Cabell urged every member to use his influence with his representative so that there would be no chance for its not passing. A motion prevailed endorsing the efforts of the committee and thanking Mr. Cabell for his earnest and untiring efforts in behalf of the measure. It was also decided to defray all the expenses incurred by the committee.

Ambrose Tomkins, chairman of the committee on the National Builders' Supply Association, made a report. The Mason Material Dealers' sent a com-

mittee to Columbus to attend the National Builders' Supply Convention. A report was made showing that the association had joined with the three other Eastern associations of the same character and formed an association known as the Eastern States Mason Material Dealers' Association. A motion to indorse and approve the committee's action was carried.

C. W. Ennis, of the Hanover Brick Co., of Morris town, was next called upon to say something regarding the brick situation. This concern has recently joined the association. Mr. Ennis said that it had always been the policy of their company to do their business through the dealers and from his experience dating over a long period he found it a good method. He said that all the dealers pushed the sale of the brick as it enabled them to sell other kinds of building material. Mr. Ennis said that if the brick men only understood the situation better they would all sell through the dealers. John M. Campbell made a motion to appoint a committee to confer with the brick men and see if they could not be induced to sell through the dealers instead of directly to the consumer. Chas. Wolf, of Newark, also spoke on the subject, citing several instances where brick men sold to the trade. Chas. Agnew, of Paterson, and Amos Bolton, of Perth Amboy, also discussed the matter. The question was finally disposed of by referring it to the executive committee with instructions to appoint a sub-committee to take up individual cases.

A motion to adjourn to the banquet hall was made and carried. All repaired to the main dining hall where a delightful menu was enjoyed. During the progress of the dinner a band discoursed sweet strains of music and some colored jubilee singers entertained with some coon songs.

After the feast, which was heartily enjoyed by all, and while the coffee and cigars were being passed President Schultz rapped for attention and addressed the gathering. He said he was glad to see so many retailers and also pleased to see the manufacturers and wholesalers present in such large numbers. He believed the manufacturers appreciated the fact that a certain branch of the business belonged to the retailers and that they have shown that they want the dealers to have the business. To maintain these reciprocal relations was what brought about the present association. He said that the spirit should be fostered and encouraged, for therein lay the real strength of the association. After continuing along in this strain for a while he said that it might be well for those present to know just how the association started, and as the man who had more to do with its formation than any other was present he would call on him to address them.

C. W. Ennis, the first president of the association, arose and told how a few dealers in settling some grievances, decided to form the association, so that matters might be amicably adjusted. He prefaced his talk by relating an anecdote about a groom at his wedding who was called upon for a speech and who was very reluctant to respond. Blushingly he arose, and with one hand on the bride's shoulder, he stammered, "I want every one to understand that this was forced on me." When Mr. Ennis said this he had his hand resting on Albert Moyer, the well known manager of the Vulcanite Portland Cement Co. Laughingly, he apologized to Mr. Moyer and the whole crowd joined in the joke. He said that although the association was only three years old he noticed bald heads, white heads and wrinkles, and judging from that the child has had an abnormal growth. Its growth reminded him he said of the story of Horace Maynard, who, when he entered Amherst College, placed an immense letter "V" over his doorway. He would never divulge the secret of that letter and it remained there for the entire four-year term. At the end of that time he was chosen valedictorian and he then explained what that "V" meant. He had it in mind when he entered. It was his goal which he finally reached.

Mr. Ennis said that he started the association with the determination to make it succeed. Its goal had been reached; it was a success. He said that the objects of the association were most praiseworthy. It was not their intention to be arbitrary or to ask anything that was not right. The wholesaler and manufacturer frequently sold without considering what an injury he was doing the trade in general. The state association idea, he was happy to say, was gaining favor all over the country and it was with pleasure that he read of the formation of new associations.

President Schultz next called on Albert Moyer and introduced him by saying that he was the manager of the Vulcanite Portland Cement Co., and that

he had been kind to the association and had been of much assistance to them. Mr. Moyer is a graceful and fluent speaker but without oratorical flourishes. His talk was much enjoyed by all present. He spoke on the mutual advantage of getting together. He said the manufacturer could not do without the retailer because it was not only inexpedient but costly. But he said a line had to be drawn somewhere but just where to draw it was sometimes extremely difficult. The dealer must co-operate with the manufacturer and must not criticise him every time he sells in large lots. He said that frequently the local dealer could not handle the business even if he wanted to. Continuing, he said that it had always been the policy of his company to maintain harmonious relations with the dealers and meet them more than half way. There was no disposition on the part of any one of the cement companies to act arbitrarily and all they wanted was intelligent co-operation in drawing the line. He complimented the New Jersey dealers by saying that they had the greatest association of the kind in the country today, and they deserved to be congratulated.

He said that he was glad to note the retailers calling each other by their first names and hoped that they could do the same thing to the wholesalers.

J. D. Loizeaux, of Plainfield, was next called on by the president, and remarked upon the evident confidence and harmony which the association had engendered. He said that there was a time when the dealers in the state were at loggerheads. Now he was delighted to say it was otherwise. Now dealers sold their goods at fair prices and a better feeling existed all around. He said that the wholesaler ought to have more confidence in the retailer and should co-operate, thereby working to their mutual advantage.

Mr. Osborne, when called upon, said that the members of the association were beginning to feel that they were it,—feel that they had accomplished something, but he said they were not in it with the Verona teamsters who issued a circular not long ago which Mr. Osborne read. This circular went on to state that on and after a certain date the price of sand would be so much and that all the teamsters and owners of the sand pits had agreed to it and of course that settled it. The reading of this circular created a great deal of amusement, although the men who drew it up certainly did not intend it as a contribution to the humorous literature of the country, but as an ultimatum which meant business.

President Schultz next called on W. C. Cabell for some further remarks regarding the demurrage bills. Mr. Cabell prefaced his remarks by saying that the president had called on the wrong man, which reminded him of the story of "Pat," who was a brick salesman. It seems that "Pat" had to catch a train that left at 3 a. m. and not wanting to sit up attempted to get a room at a late hour but found all the hotels full. Finally he landed in a place where the proprietor, after listening to "Pat's" tale of woe, told him that if he would not mind sleeping in the same room with a negro he could let him have a bed. It seems that the whole affair was a put up job on "Pat," as no sooner had he gone to sleep than his erstwhile companions crept up into the room and blacked "Pat's" face. When the time drew near for the train to arrive "Pat" was called, and dressing in a hurry in the half light of the morning, and without a mirror, he did not notice what had been done to him. He hurried to the station, caught his train and got to his destination, and the first thing he thought about was a drink. Stepping up to the bar he for the first time noticed himself in the mirror behind the glasses, "Pat" stared at himself in amazement and finally ejaculated, "Begorra, they've called the wrong man."

He said that the wonderful friendship existing between the wholesalers and the retailers was of comparatively recent origin. He said the wholesalers want to protect the retailers but frequently do not know who they are. Being a lawyer he said he believed in laws and thought the lien law would be a good thing. He said that laws were frequently drawn up by lawyers so that they could not be understood, because if every man could understand them there would be no need of lawyers. The demurrage law, he said, would be a good thing and he thought that it was one of the laws that every one could understand without the necessity of a lawyer.

J. M. Campbell, who was next called upon, said that he had done all his talking in the meeting. He however took this occasion to thank Mr. Moyer for his expressions of evident and sincere friendship, and said that he believed the manufacturers were

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Plaster.

The Art of Plastering.

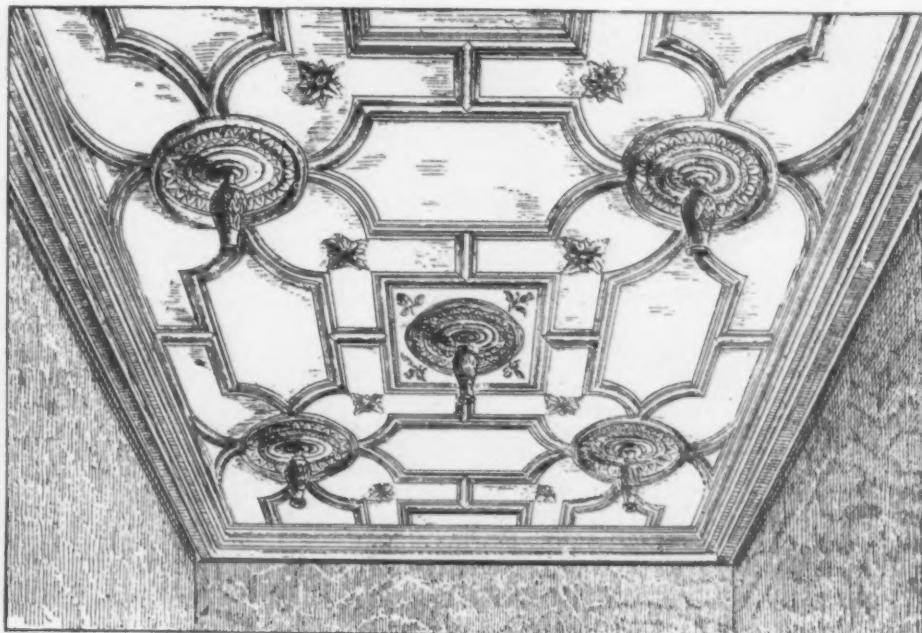
In the February 22 issue of ROCK PRODUCTS under this heading there was a brief description of the magnificent palace at Fontainebleau, erected by Francis I., and a mention of the palace of Nonsuch, built by Henry VIII., of England, in an effort to vie with this monarch. It is to be regretted that not one vestige of this great building remains today, so that we may judge of the ability of the stucco modellers Henry imported from Italy to decorate this immense pile. We know it was called Nonsuch because it had no equal and we are told it was a large and sumptuous pile, containing two quadrangles and built in the half-timbered style prevalent in England in the sixteenth century. It is written by one who saw it in 1613 that the labors of Hercules were set forth on the king's side and on the queen's side were exhibited all kinds of heathen stories with naked female figures. Another man who saw it in 1605 says he "much admired how it had lasted so well and entire from the time of Henry VIII."

But little is known as to the development of the art of plastering in England before Henry VIII. brought the stucco modellers from Italy, but from them the English plasterers learned something about the art. The early Britons plastered their houses with mud, while the Normans used lime plaster. Gypsum plaster was introduced in England in 1254 by Henry II., who visited Paris and admired the whiteness of the walls. It was not however, until the Sixteenth century that the English plasterers learned modelling, such as had been practiced in France and Italy. Their work had been more practical and the decorative department of the plasterer's art had not been practiced to any great extent.

But the English plasterers quickly learned the operative lessons the Italian modellers taught them, though they never learned their skill of design. But this was not considered necessary. The exigencies of English houses were different from those of Italian palaces, so they fitted their work for its purpose—a purpose never applied in any other country—that of covering a flat ceiling in a room of moderate height with a suitable plastered decoration. Charles Williams is the first English plasterer of whom we have a record as a practicer of the new art. He did not attempt to vie with the more artistically educated foreigners but evoked for himself an especial decoration, based in some degree on the familiar groining which had strengthened and ornamented the stone roofs with which he was familiar. Geometric rather than freehand designs were his first essays. These at first consisted of interlacing squares with radial ribs from their intersecting points and as he grew bolder in his work these radial ribs became arched, and from their junction depended a pendant more or less ornamented. Frequently modeled foliage replaced these radial ribs. These simpler ceilings relied greatly on color and gilding for their effect, and the plasterer and painter were united not only in their work but in person. But Parliament legislated against the plasterers working in oil colors and this together with the decline of the medieval sense of color in favor of the homogeneous white produced by pure stucco brought about a change, which also meant a greater richness of designs. Thus we see curvilinear lines replacing the straight lines and the free adoption of scroll work on large dimensions. An example of the decoration of ceilings in this manner is shown in the illustration published this month.

The Grand Rapids Plaster Co., of Grand Rapids, Mich., has bought about 200 acres of land and will erect another plaster mill and sink several new shafts.

The Atlas Wall Plaster Co., of Louisville, Ky., has been incorporated with a capital stock of \$10,000.00 by S. W. Stopher, J. S. Minor and W. T. Armstrong.



PLASTER CEILING, CARNOCK CASTLE, STIRLINGSHIRE, ENGLAND, 1640.

On a Little Vacation.

One of the events in the life of the shantyboat men and other folk who live on the Mississippi river was a visit during the month of February of two gentlemen with slouch hats and rough and tumble clothes floating down the big Mississippi river, incidentally visiting and trying to discover what is new along the line. Upon being introduced to the boatmen who were taking this cruise we found them to be President S. L. Avery, of the United States Gypsum Co., and a companion. President Avery was somewhat worn down and he thought a little outing of that kind would do him good and it did, but he is so thoroughly impregnated with energy that he was soon looking the worse for wear after a month's aggressive action with the big operations in this country.

We visited him the other day. He was on the sick list, but took occasion to show us the big general office at 200 Monroe Street, Chicago. The business was thoroughly departmentized. It is hard to realize the enlarged volume of business and various uses to which gypsum is being put and see the advertising of the general lines in which they are pushing their business. Their plants are scattered from the East to the West, making it possible to cater to the dealer everywhere, and well equipped to take care of the business. Their field force visits the dealer everywhere, but all we had to do to realize their difficulties was to see the pile of telegrams eight inches deep. This all came about from the shortage of cars and caused the president of the United States Gypsum Co. to give us a little insight into the troubles of the large manufacturer, for he said: "After you get your operating end worked up to the highest possible efficiency, your sales' department right on edge to do the greatest business ever and then have 150 telegrams back and forth, some of them long enough for a column in the newspaper, and just get one encouraging word from one railroad operator it is rather discouraging and certainly makes it hard to do business. If the car shortage continues it is going to cost manufacturers a great deal of money because it is impossible to secure the greatest efficiency for either mill or sales department when the traffic manager spends fifteen hours a day trying to get the cars. When you send your men out and practically let them live with the operating departments of the railroads even then you can only get one car when you need ten."

This car shortage is a serious matter and it seems to be worse now than it was sixty days ago, and now that the weather is opening up and building operations will be started it looks like a continued comedy of errors caused by the financial department of the railroads who have taken all the milk out of the cocoanut and expect the operating department of the railroads to conduct a business with dry mortar. Recurring to Mr. Avery's statement, what profiteth it a man to make all these plans if he can not get cars?

Niagara Gypsum Co.

The Niagara Gypsum Co., which was recently organized, has begun the erection of a steel frame mill at Wheatville, N. Y., will install the most modern machinery for calcining plaster and will have the mill in operation by midsummer. John A. Kling, of Cleveland, is president; W. K. Squier, of Syracuse, N. Y., is vice president; M. A. Reeb, of Buffalo, N. Y., is secretary and treasurer. The directors are the officers and James McCrady, of Braddock, Pa.; E. L. Merriman, of Scranton, Pa., and Mr. Claussen, of Baltimore, Md. The company owns mining rights of about five hundred acres of land near Wheatville, and has a station on the West Shore about thirty miles east of Buffalo. They have one shaft down and have been mining rock for some weeks. The officers of the company believe they will have one of the most complete mills in the country.

Will Make 200 Barrels a Day.

NEPHI, UTAH, March 1.—The work on the plant of the Utah Consolidated Plaster Co.'s plant near here is being rapidly pushed to completion. Active operation of the plant is expected by May. A canal one and a half miles long with 800 feet of pipe is being dug which will give 70 h. p. The estimated cost of the plant in \$20,000.00. The output will be about 200 tons a day. The following are the officers of the company, which is capitalized at \$150,000.00:

W. J. Robinson, of Salt Lake City, president and general manager; W. H. McIntyre, of Salt Lake, vice president; J. W. West, of Salt Lake, secretary; Edward L. Burton, of Salt Lake, treasurer; James H. Moyle, of Salt Lake, attorney; Milton Jennings, of Levan, superintendent; Arthur E. Snow, engineer. Directors, W. J. Robinson, W. H. McIntyre, James H. Moyle, B. F. Grant, Arthur E. Snow, J. W. West, Dr. E. S. Wright, R. E. Miller and Milton E. Jennings.

The Flint Wood Plaster Co., of Flint, Mich., is making improvements with a view to doubling the capacity of its plant.

J. P. Kean, of St. Louis, Mo., is at the head of a company formed at Jackson, Mich., to manufacture fireproof plaster slab.

It has been said that sand lime brick manufacturers are inclined to be too scientific and theoretical in the manufacturing department and give too little attention to the boosting of sales at the office. If these goods were well graded and christened with some attractive name as a highly recommended face-brick, they could undoubtedly be sold in some cases at double the figures they are regularly quoted at now.



MAMMOTH PLANT OF AMERICAN GYPSUM CO., PORT CLINTON, OHIO.

A Twentieth-Century Plaster Mill.

The American Gypsum Co., with general offices in the Garfield Building, Cleveland, O., have recently completed their new plaster mill at Port Clinton, O., and it is now in operation. We present three different views of their mill, photographs of which were taken under adverse conditions and fail to do their plant justice, which is remarkable in many ways.

It is not only one of the largest plants of its kind in the world but bears the distinction of being the largest building of its particular type ever built of reinforced concrete. This company considered different types of construction and their respective merits and objectionable features and decided after considering all that, inasmuch as they were going to invest such a large amount of money that they would erect an absolutely fireproof plant, thereby not only protecting themselves against losses by fire but their customers' interests as well from losses occasioned by delays caused by fire.

To get a correct impression of the size of this immense plant one must see it for one's self and to fully appreciate the magnitude of such an undertaking, to construct a building of such proportions of reinforced concrete, the vast amount of detail work in connection with the construction of such a plant designed to correspond with the requirements of the machinery equipment, one must not only see it but spend days studying its construction. It is a magnificent structure and speaks well for the nerve and enterprise of this company.

But the building itself is not the only remarkable feature of this plant; the machinery equipment is equally startling to one accustomed to seeing the old style plaster mills. After considering the different kinds and sources of motive power the officers decided on electricity, and all the machinery is electrically driven and is so arranged that the many different departments of the plant can be operated independently of each other, or at the same time as desired, thereby effecting not only a larger saving in power but in time.

Electric power is used not only for the machinery equipment of the mill proper, but is used for mining rock and for hoisting rock from the mine, pumping water, etc. Another striking feature of this plant is the general layout or arrangement of buildings, shaft and railroad facilities, all of which have been laid out with but apparently one object in view, that of handling and converting raw material into finished product and loading it in cars with as little labor as possible.

Some radical departures from the old accepted standards of machines used were made in the machinery equipment of this plant which have proven successful in turning out a finished product. A remarkable feature of the machinery equipment is that all the machinery in addition to being arranged in departments is installed in duplicate to guard against delays or shut down. If desired it can be operated

all at one time to give the plant an enormous capacity so as to enable them to take care of all customers' orders promptly during the rush of the busy season.

This plant is located about two miles east of Port Clinton, O., on the main line of the L. S. & M. S. R. R. and is centrally located on a large tract of land owned by the company, all underlaid with a splendid vein of gypsum.

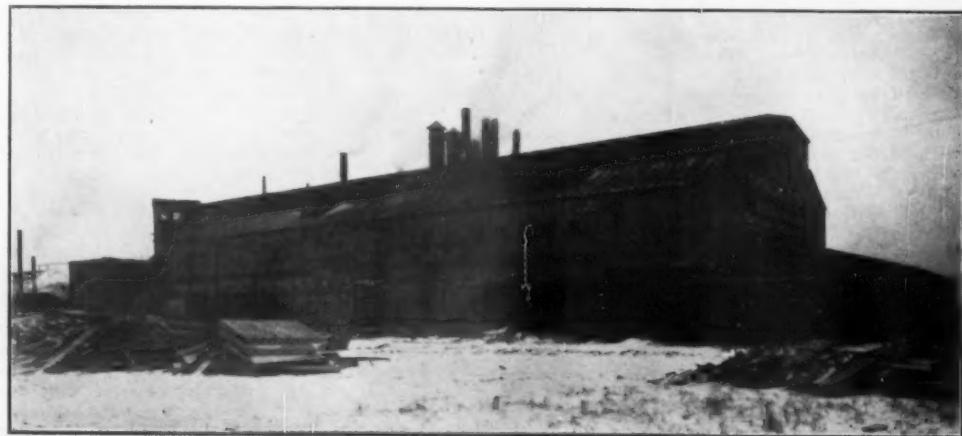
The company's officers are: John A. Kling, Cleveland, O., president; D. J. Kennedy, Pittsburg, Pa., vice president; J. H. McCrady, Braddock, Pa., treasurer; J. M. Horner, Braddock, Pa., secretary; F. J. Griswold, Port Clinton, O., manager.

This plant which is now in operation was designed by F. J. Griswold, who has had charge of the construction and installation of the machinery. The company extends a cordial invitation to any of its customers to call and see them, either at their general offices in Cleveland or at Port Clinton.

Will Erect Plant in Australia.

R. L. and D. Adams, of Sydney, Australia, agents in the colonies for the Elastic Pulp Plaster Co., of Nepolean, O., are making an extended trip around the world and especially through the United States investigating and studying the conditions of the plaster business. These gentlemen were engaged in the building and contracting business in Wellington, New Zealand, until a few years ago, when they moved to Australia, and since they have devoted their time to the plaster business. Though they are a long way from home in this country, they have kept in close touch with the progress of gypsum production and the advances made in the different units of Rock Products. Fibrous plaster was in-

troduced by them in the colonies, and there is a large branches of this great industry through the colonies used each year. The consumption of plaster in the colonies amounts to about 3,000 tons a year. More care and work is given to finishing, and the Messrs. Adams state that they get more artistic work done. One form of plaster, of which a great deal is used in their country, but which they say they have seen but little in this country, is the plaster cast in ornamental figures which presents a handsome appearance. Moulds are made of gelatine into which the plaster is poured and a piece of burlap laid on so that the plaster will harden to it. It is removed from the mould and allowed to harden; it is fastened to the ceiling or walls by screws. Another feature they make considerable of is the mixing of the color in the plaster when it is being made, thus giving any color to a wall without having to tint it, though it may be tinted a different color afterwards. The Adams Bros. will erect a gypsum plant for the manufacture of plaster when they return to Australia, and are investigating the merits of the machinery manufactured for this purpose. Australia abounds in gypsum rock and gypsiferous beds which are owned by the government. They expect to erect their mill at Sydney and will carry their product by boat to it. This step has been made necessary as there are no mills in the colonies and the freight rate with the duty makes export plaster an expensive commodity, hence the small consumption. Having a mill in the country will lessen the price and increase the demand for plaster where substitutes are now used. There are a few Portland cement plants as well as lime plants, but Australia abounds in an excellent quality of stone which is used to a great extent in buildings. Before returning home Messrs. Adams will visit plants in United States, England and Europe and return home via Egypt about July.



MAMMOTH PLANT OF AMERICAN GYPSUM CO., PORT CLINTON, OHIO.

Clay.

Producer Gas for Clay Plants.

At the recent annual meeting of the Illinois Clay Workers' Association, one of the interesting questions up for discussion was, "What has producer gas done for the clay manufacturer during 1906?" One member gave the following account of his experiences in the use of producer gas:

"I can say for producer gas that it has been successful at our plant. We are using a 12 chamber continuous coal burning producer gas kiln. We can burn our tile well; we can overburn them with the producer gas as well as we can with coal, but you can not blacken them. As to its advantages, it has many, because of the fact that the coal is all burned at one point. The gas is produced in a common producer and is conveyed to a flue in any compartment of the kiln connected with a sheet iron conductor which is carried to the kiln and comes in contact with the hot gases from the kiln just behind, and is ignited. The advantage of producer gas, as I understand it, though I don't know much about it, is the fact that the gas is ignited or burned from the hot gases in the kiln. There is but very little advantage in producer gas over coal, if any, unless burned with hot gases at a temperature above 1,200 degrees. If you attempt to burn producer gas with cold air, you will have a failure. It is very simple. We are satisfied with the course that we are taking. I think that we can burn up to any temperature. I do not know how high a temperature, but I think we can burn to about 1,800 degrees. We use Green County nut coal, fourth grade. It is anything from 3 in. down. It passes an $\frac{1}{4}$ in. screen, and the larger lumps taken out of the screen. We do that simply for convenience. We have used mineral, but it is very hard for the men to work, they don't like to work it and there is no economy in it. In reply to a question as to what the economy would be in dollars and cents: That has a wide range, owing to different conditions. A continuous kiln, to get the best results out of it, would have to run to its full capacity except at short intervals at a time, and during those short intervals, we were not able to get a test of the fuel it would take."

Notes of the Trade.

The Aleco Brick Co., of New York, has been incorporated with a capital stock of \$200,000.00 by E. H. Foster, W. J. Blackburn, and Elliott Morton.

The Fearless Brick Co., Williamson, W. Va., has been incorporated with a capital stock of \$50,000.00 by A. C. Pinson, E. S. Juhling, W. A. Harris, T. B. Jones and G. R. C. Niles.

The Union Brick and Tile Co., of Warsaw, N. C., has been incorporated with a capital stock of \$50,000.00, D. B. Ehrlin, A. M. Falsom, J. E. Richwine and others.

The Oklahoma Vitrified and Pressed Brick Co., of Oklahoma City, Okla., has been incorporated with a capital stock of \$100,000.00, by Charles Hoshour and I. E. Hunter, of Oklahoma City, and David Hoshour, of Cleveland.

The city of Lansing, Mich., has closed a contract with the Michigan Paving Brick Co., of Saginaw, Mich., for 130,000 paving brick.

The Marita Brick and Tile Co., of Everett, Va., has been incorporated with a capital stock of \$20,000.00 by W. H. Adkins, W. S. Barnhill, and J. G. Barnhill.

The Empire Brick and Stone Co., of Spokane, Wash., has been incorporated with a capital stock of \$100,000.00 by F. E. Goodall, E. H. Gimper, J. H. Ehlers, W. J. Kilmer and others.

A. W. Hilkner, president of the Hilkner Brick Manufacturing Co., of Racine, Wis., was elected president of the Wisconsin Brickmakers' Association at the recent convention in Madison.

Henry M. Baldridge, of Mt. Auburn, Ill., a brick and tile manufacturer, has filed a petition in bankruptcy, placing his liabilities at \$6,620.00 and his assets at \$400.00.

The Coast Brick Co., of Oakland, Cal., has been incorporated with a capital stock of \$50,000.00 by J. C. Brannock, Dennis Dimond, Otis W. Engs, Alfred S. Rix and A. S. Day.

The Seaboard Brick Co., organized at New York, with a capital stock of \$7,000,000.00, has bought a 550 acre farm at Catskill, N. Y., and will build a plant with a capacity of 300,000,000 brick a year.

The Black Dolly Fire Clay Co., of Salt Lake City, Utah, has been incorporated with a capital stock of \$5,000.00 by Israel Cole, F. A. Cole, and Harry S. Harper.

The Northwestern Drainage Construction Co., of Pancroft, Neb., has been incorporated by C. J. Lenander, J. H. Welp, C. M. C. Walters and W. J. Anderson.

The Bangor Brick Co., Bangor, Me., has decided to increase its capital stock to \$50,000.00.

The Bippus (Ind.) Tile Co. has been incorporated with a capital stock of \$15,000.00. They have taken over the plant which was operated under a partnership by J. W. McCollum, Bradley Howenstein and M. G. Wright. The plant will be enlarged and a steam drying system will be installed.

NEW JERSEY RETAILERS.

(Continued from page 54.)

on the right track and that such meetings as these where good fellowship abounded, would do more to cement the good feeling between the wholesalers and retailers than anything else.

The president, having exhausted his list of speakers, asked the secretary if he knew of anyone else. The secretary said that possibly Mr. Andrews, representing J. B. King & Co., might have something to say. Mr. Andrews said that he felt much like the darky who was asked to change a ten-dollar bill. The darky said "Boss, I hasn't got de change but I feel very much complimented at yer axing me." He said he felt very much complimented at being asked, but that all he could say was that he was glad to be present among them, many of whom were his warm personal friends. As far as his firm was concerned they did not do business except with the dealers, and they did not believe in skinned milk, but were perfectly willing to let the dealers have it, cream and all.

The next speaker was H. P. Cook, who spoke of the benefit of local associations. He said they worked wonderful results in improving local trade conditions.

Ambrose Tomkins, of Newark, spoke of the local association in his city. He said they held a meeting once a week at which all differences between dealers were adjusted. These meetings were productive of closer and more friendly relations among the local dealers. This was the last of the talks which were much enjoyed and ended what was probably one of the most successful meetings from every point of view ever held by the association.

NOTES OF MEETING.

Albert Moyer has just returned from a trip abroad where he spent much time studying conditions and peoples. His observations were of much interest and Mr. Moyer talks interestingly of his experiences.

W. DeW. Stanford, representing J. & S. S. Thompson, of Elizabeth, was present. He said that they had had a good season as there was considerable building going on except during the last two months when the weather was too bad to carry on building operations. They have two yards at Elizabeth and handle coal and lumber besides a full and complete line of builders' materials.

Edward W. Conlon, the well known masons' building material man, of Jersey City, said that the prospects were extremely good for a big season, as there was quite a good deal of building contemplated in Hudson county.

G. W. Tomkins, the former president of the association, is in Germany at the present time, partly on business and partly for pleasure. He will return in July.

Sand and Gravel.

More About Lignite in Sand.

The discussion which originated in the meeting of the Illinois Mason's Supply Association last month and which appeared in the February 22 issue of ROCK PRODUCTS, has caused some valuable information to be brought forth which will no doubt be of great advantage to the users of Mississippi river sand. The discussion was concerning the presence of lignite in sand pumped from the Mississippi river, and the effect its presence had on concrete, especially on exposed surfaces such as sidewalks. It is said that the lignite through expansion caused pit holes to appear in the surface of sidewalks and the question as to how this might be obviated was raised. S. W. Curtis and C. M. Rose, of the Garden City Sand Co., were consulted as experts and Mr. Curtis offered his services and the use of his laboratory to analyze samples of Mississippi river sand. J. W. Rule, a contractor of Cairo, Ill., reading the report of the discussion in ROCK PRODUCTS, sent a sample of some sand he is pumping from the Mississippi. The sample is free from sediment and silt and is made up of white quartz and black granite. Some of the black grains under a glass appear to be a fused material such as slag or coal, but are not disintegrated under the test of a blow pipe or under low heat. Lignite, Mr. Curtis says, contains a certain amount of vegetable matter, which if subjected to a blow pipe such as he used in the experiment would immediately be consumed and leave an ash containing three times the matter it contained in the original state. Mr. Curtis' experiment showed that the sand contained no lignite.

When the sand was used in a one to three mixture with a first class Portland cement, briquettes showed an absorption of ten per cent of moisture and broke at fifty-five pounds pressure after twenty-four hours. In another test the briquettes were steamed two hours and boiled for four hours, and broke after forty-eight hours at 141 pounds. With the coarse grains sifted and the cement mixed and made into blocks finished about the same as the surface of a sidewalk, there was not the least sign of any flaws or popping. Mr. Curtis says that after his tests, he is satisfied that the quality of this sand is as good as any on the market for concrete or finishing sidewalk purposes as far as colored sand can be and if the larger grains are taken out, can be satisfactorily worked in any kind of concrete. He would like to receive samples of other Mississippi river sand and to make tests, and invites those interested to send samples to him.

A sand and gravel company is being organized by citizens of Mt. Carmel, Ill. R. L. Tilton, Thomas Provine, Joseph Moore, Clarence Gillam and Frank Douglass are members of a committee to investigate the various kinds of machines used in sand operations.

The Indiana Gravel Co., of Pierre, S. D., and Chicago, Ill., has been incorporated with a capital stock of \$100,000.00.

The Lincoln Sand & Gravel Co., of Lincoln, Ill., is surveying for the purpose of placing tracks at the pit in the southern end of that city.

The Lake & River Sand Co., of Cleveland O., has been incorporated with a capital stock of \$15,000.00, by Mark A. Callahan, Norman Callahan, R. M. Calfee, J. G. Fogg and A. M. Luckemeyer.

Owing to the car shortage, Walla Walla, Wash., has been suffering from a sand famine.

The Gocella Stone & Sand Co., of Falls Creek, Pa., has purchased a new stone crusher for the manufacture of sand.

Side Talk.

Handling Stone by Grab Buckets.

This is the cement age. Every day one reads in the technical papers of gigantic engineering works in which thousands of yards of concrete are used, necessitating the handling of large quantities of cement, sand and broken stone. The cement that comes in sacks or barrels can readily be handled, as may also sand, but the problem of unloading broken stone from cars or barges is not so readily solved. Both cement makers, using large quantities of broken stone and cement users requiring stone of smaller sizes, are beginning to recognize the value of grab buckets as a means for handling broken stone and sand in a rapid and economic manner.

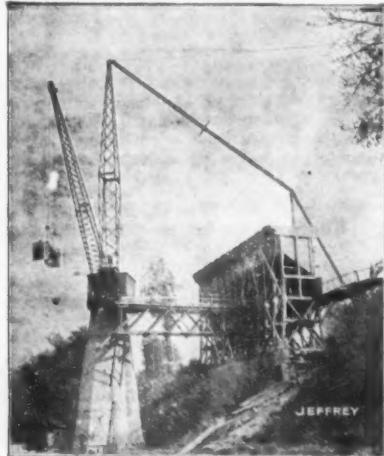
We illustrate on this page a modern plant, owned and operated by the Kosmos Portland Cement Co., of Kosmosdale, Ky., for handling large quantities of stone from barges to storage bins from which it is spouted into cars as desired. This revolving derrick is of steel construction and is mounted upon a concrete pier. The mast is 92 feet high and the boom 75 feet long. Hoisting and slewing are accomplished by separate engines, the former being an 8 x 8 in. and the latter a 6 x 6 in.

The rig is equipped with a Jeffrey Class "B" grab bucket, especially designed for handling material of this kind. In one picture is shown the bucket ready to take its bite, and, as will be noted, the span is large, and the bucket will fill itself to capacity in a shallow depth of material. Another picture shows the bucket closed carrying its load to the storage bin. This bucket can unload a 1,000-ton barge in about ten hours and will handle in a satisfactory manner, stone up to 4 in. cubes. Stone can also be handled from cars by means of this bucket, 90 per cent being cleaned up without the least damage to car, no hand shoveling being necessary.

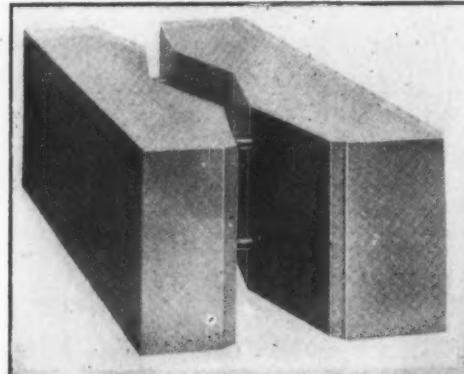
This bucket is of heavy design to withstand the hard usage to which it is subjected, and shows but little wear after a season of hard usage. The Jeffrey Manufacturing Co., of Columbus, Ohio, build this bucket in any desirable size and design, build and erect rigs for the handling of same. They will be pleased to have their engineering department help you out in solving your problems of stone, sand and gravel handling, and will be glad to draw up preliminary plans upon receipt of requirements.

Induction Motors to Drive Tube Mills.

The present prevalent practice of using electrical drive for operating cement making machinery has brought about numerous new applications of the induction motor. The service required of a motor operating ball and tube mills is severe, especially as regards starting, when the mass of material in the mill must be lifted until a certain point in the revo-



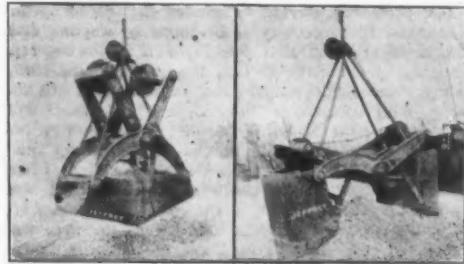
KOSMOS PORTLAND CEMENT CO.'S DERRICK FOR HANDLING STONE.



BLOCKS MADE ON ANCHOR MACHINE.

lution has been reached, thus requiring high starting torque. The Allis-Chalmers Co. has developed a line of squirrel cage type induction motors which are exactly suited for this particular purpose. The German-American Portland Cement Co., of La Salle, Ill., whose plant is equipped throughout with Allis-Chalmers cement making and electrical machinery, recently ordered two additional 5 x 22 ft. Gates tube mills, and a special Allis-Chalmers induction motor which will operate geared to the tube mill, at a speed of 660 r. p. m.

The Williams Patent Crusher and Pulverizer Co. have closed a contract with the Hunt Engineering Co. for nine of their grinding machines to be used in a cement plant in Tennessee. They report large sales in the rock crushing line, especially with gypsum people.



JEFFREY CLASS "B" GRAB BUCKETS, OPEN AND CLOSED.

The Allis-Chalmers Co., of Milwaukee, Wis., has opened a new branch office in New Orleans and their representatives can now be found at 316 Godchaux Building. Their representatives will be ready to welcome all who are interested in the machinery this company manufactures.

The Arthur Koppel Co., Pittsburg, Pa., has moved its San Francisco office from the temporary quarters, 515 Market Street, to permanent quarters in rooms 1509, 1510, 1511 Chronicle Building.

E. M. McIlvain, formerly president of the Bethlehem Steel Co., has been elected president and general manager of the Robins Conveying Belt Co., Park Row Building, New York.

An order shipped March 3, 1907, of Hercules concrete block machines weighed a little over eighteen tons. The same week three machines were shipped to Ireland and two to Porto Rico. The Century Cement Machine Co., of Rochester, N. Y., makers of the Hercules, report a large increase in domestic as well as foreign orders.

Robert E. Carrick, of Philadelphia, Pa., formerly general superintendent with the Unit Concrete-Steel Frame Co., of Philadelphia, and more recently with Tucker & Vinton, New York, in the capacity of general engineer, has joined the engineering corps of the General Fireproofing Co., of Youngstown, O.

Mr. Carrick's experience has been extensive in laying out and superintending the construction of reinforced concrete work, and with the General Fireproofing Co., his interest will be centered in the sale and installation of pin-connected girder frames. The type of the girder reinforcement developed in this product is claimed to possess an exclusive feature in that it provides a complete mechanical tie by a link and pin connection over each column or beam

intersection, a tie which does not in any way depend upon the adhesion of the concrete to the steel.

There is one exhibit at the Greater Louisville Exposition which in point of distinctiveness and originality surpasses anything in the engraving line ever shown in this or any other country. This exhibit is a half-tone engraving at the Tinsley-Mayer booth, which was produced through a screen containing seven lines to the inch. This production breaks the world's record, as the nearest approach to it was an engraving executed by a London firm last year through a screen with fourteen lines to the inch. The fact that the Tinsley-Mayer Co. have shortened the number of lines by just one-half makes their production a most remarkable feat and reflects most creditably upon the wonderful work of this enterprising firm. Similar firms over the country have been striving for years to accomplish the same feat in engraving, but have not succeeded. The photograph in question attracts unusual attention from the many visitors to the booth, because it is shown in comparison with another made through the very finest screen of 200 lines to the inch. When questioned about the matter E. B. Tinsley expressed the opinion that in this latest half-tone production, which was executed only two weeks ago, the end has been reached, as it would be impossible for a photograph to retain its likeness on a half-tone made through a coarser screen.

We are showing this month a picture of the block made on the Anchor machine by the Anchor Concrete Stone Co., of Rock Rapids, Ia. A complete description of this machine was given in this department of the February 22 issue of ROCK PRODUCTS.

OHIO RETAILERS' MEETING.

(Continued from page 52.)

Hamilton, of Columbus, were on hand as a steering committee. E. C. Kissinger and Carl Frank also decided to be in the sport, and there were something like twenty-five or thirty of the delegates who had never seen a big quarry in the rain. But it was a merry party that finally got started after the trolley line was fixed so they could get across the river. The trip consisted of two distinct divisions, a visit to the great storage dam, recently completed for the water supply of the city of Columbus, and returning by way of the quarries. Lawson Moores borrowed a rubber coat and A. L. Schneider had a pair of rubber boots, but as one of the boots had a hole in it, it didn't do much good. "Bill" Taylor was out at the quarries in all his glory. They have a splendid equipment with a Davenport locomotive to haul the quarry cars about the place.

After inspecting the Gates crusher plant and the powerhouse, that was built entirely of concrete without the use of sand, the party embarked aboard four quarry cars. Just at this time a staff artist of ROCK PRODUCTS came over the edge of the mountain on the other side of the quarry. That is why we are able to show the photograph on page 51 of the party just as they started back to the city.

Wanted and For Sale

One insertion, 25c a line; Two insertions, 50c a line; Three consecutive insertions with no change in the composition, 55c a line. Count eight words to line; add two lines for a head.

WANTED—HELP.

FIFTY QUARRYMEN—Wages \$1.54 per day with board and lodging. Excellent locality. JAMESON LIME CO., Tehachapi, Cal.

EXPERIENCED and capable man to take the management of a stone quarrying sawing and crushing plant. An exceptionally fine grade of white limestone for building purposes. Straight salary or salary and percentage of profits to right man. Address C 5, care Rock Products.

ROCK PRODUCTS.

59

WANTED—HELP.

FIRST CLASS General Foreman for crusher plant, one who thoroughly understands gyratory crushers and their repair, drilling, blasting, track work, etc. Good position for right man. Give age and full particulars regarding experience and previous employment. Address E 1, care Rock Products.

WANTED—POSITION.

AS FOREMAN or Superintendent of ballast quarry; have had twenty years' experience. Am perfectly familiar with gyratory crushers and all machinery necessary for operating ballast plants. Best of references. Address Y 16, care of Rock Products.

FOR SALE—PLANTS.

ALABAMA LIMEWORKS, operated daily, including 500 acres limestone and timber lands. LOUISIANA BUSINESS CO., New Orleans, La.

FLINT CRUSHING PLANT near LaFayette, Ind. Nothing like it in the country. Other business takes my time. EDWARD HELY, Cape Girardeau, Mo.

SAND-LIME BRICK PLANT—Capacity 15,000 per day. Whole of last year's output sold at \$11.00 per thousand. Will sell whole or part interest, or stock in the company with view of increasing the capacity. Full particulars given on application. Address C 1, care Rock Products.

OR LEASE, the North Adams Lime Works, capacity 100 bbls. per day with plenty of stone for larger capacity. The lime is a high grade finishing lime, situated near Boston & Maine and Boston & Albany railroads. Good trade established and kilns are run all the year. For further information address HARRY M. FARNAM, North Adams, Mass.

YOU CAN SECURE an established business, live town, cheap sand and gravel, brick \$12.00 1,000. E. C. KEMPER, Dallas, Texas.

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Allis-Chalmers Co.	
Alpha Portland Cement Co.	2
Aising, J. R. & Co.	
Alma Port. Cement Co.	1
American Air Compressor Works.	
American Cement Co.	84
American Cement Plaster Co.	75
American Clay Working Machinery Co.	
American Gypsum Co.	1-81
American Hydraulic Stone Co.	61
American Procs. Co.	19
American Rolling Mill Co.	74
American Sandstone Brick Co.	68
American Sand-Lime Brick Co.	83
American Soap Stone Finish Co.	80
Anchor Concrete Block Mac. Co.	71
Anderson & Sons, A.	
Anderson Bros.	
Anderson, Geo. & Co.	
Ash Grove White Lime Association.	18
Ashland Fire Brick Co.	72
Atlas Car Mfg. Co.	84
Atlas Portland Cement Co.	84
Aurora Boiler Works	
Austin Mfg. Co.	18
Backus Water Motor Co.	
Ballou Mfg. Co.	72
Banner Cement Co.	6
Barclay Bros.	
Bartlett, J. E. & Co.	6
Bartlett, C. O. & Snow Co., The.	41
Barnes & Co.	
Barre White Granite Co.	
Bates Eng. Co.	17
Bedford Quarries Co., The	
Bedford Steam Stone Co.	
Bianchi, Chas. & Son	
Bilodeau, J. O.	
Binns Stucco Retarder Co.	1
Bloomington Cut Stone Co.	
Blue Ridge Marble Co.	
Bolle, N. E. Stone & Contracting Co.	
Bowers, R. C., Granite Co.	
Bowling Green White Stone Co.	
Bradbury Marbl. Co.	
Brooks-Curtis Stone Co.	
Broomell, Schmidt & Steacy	82
Brown Hoist & Mac. Co.	21
Buckeye Portland Cement Co.	2
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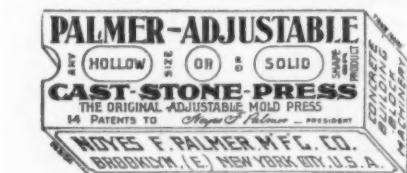
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Cantwell, Robert.	17
Caldwell & Co.	61
Capon, Thomas W.	61
Carpenter, R. H.	75
Cardiff Gypsum Co.	22
Carolina Port Cement Co.	75
Carthage Bldg. Stone Co.	75
Carthage Crushed Limestone Co.	75
Carthage Marble & Lime Co.	75
Carthage Stone Co.	75
Carthage Quarry Co.	75
Carthage Superior Limestone Co.	75
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Case Mfg. Co.	75
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Cement Machinery Co.	66
Century Cement Machinery Co.	70
Cement Tile Mchly. Co.	73
Chase Foundry and Machine Co.	68
Charles, J. M.	22
Chattanooga Paint Co.	61
Cheical Stucco Retarder Co.	80
Chicago Beiting Co.	1
Chicago Cut Stone Co.	
Chicago Bloomington Stone Co.	
Chicago Concrete Mchly. Co.	74
Chicago Pneumatic Tool Co.	58
Chicago Portland Cement Co.	2
Chickamauga Cenem. Co.	2
Chickamauga Quarries Co.	
Clayton Air Compressor Works.	
Cleveland Builders Supply Co.	16
Cleveland Car Co.	61
Clyde Iron Works.	12
Clinton Metallic Paint Co.	22
Climax Stone Co.	60
Clover Leaf Co. The.	60
Cohen, Michael.	43-43
Combustion Utilities Co.	
Concrete Eng. & Equip. Co.	76
Concrete Stone & Sand Co.	67
Consolidated Granite Co.	
Consolidated Quarry Co.	
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Cummer & Co., F. D.	22-76
Dallett, Thos. H. Co.	
Des Moines Mfg. & Supply Co.	76
Dexter Port Cement Co.	
Diamond Cement Machinery Co.	70
Dillon & Haley.	
Dunigan, W. D.	83
Dunn, W. E.	68
Dugas Cut Stone Co.	7
Du Pont Powder Co.	
Eclat Granite Co.	
Edison Portland Cement Co.	5
Empire Gypsum Co.	75
Empire Stone Co.	
Ersham, J. B. & Sons Mfg. Co.	78
Eureka Machine Co.	72
Evans, E. E.	68
Falconer & Co.	
Farnam Chesire Lime Co.	17
Finerty, J. W.	
Fisher Hydraulic Stone & Mac. Co.	73
Fowler & Pay.	16
Floor City Concrete Machy. Co.	68
Franklin Printing Co.	9
French, Sam'l H. & Co.	
Frenier & Son.	
Furst, Kerber Stone Co.	
Gade Eng. Co.	
Gandy Beiting Co., The.	61
Garry Iron and Steel Co., The.	60
Georgia Marble Co.	
Georgia Marble Finishing Works.	
Golbranson & Co.	
Goett, C. W., Lime & Cement Co.	6
Granite Ry. Co.	
Granite Ex. Co.	
Gidicli Bros.	
Hardsocg Wonder Drill.	21
Harrast, Wm. G.	
Harrison Supply Co.	
Hawkrige Bros.	
Hendricks Novelty Co.	
Hoadley, J. & Sons	
Hoadley Stone Co.	
Homes Valley Lime Co.	12
Hornells Mining Tool Co.	68
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Hutchinson, L. H.	
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Indiana Bedford Stone Co.	
Ingersoll-Rand Co.	9
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Kent Mill Co.	44
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Knutzen & Iadel.	71
Koppel, Arthur Co.	8
Kosmos Portland Cement Co.	41
Kotter, H. G.	
Kramer Bros.	66
Kritzer Company, The.	10
Laclede Fire Brick Co.	14
Lane, W. A.	
Lawrence Cement Co.	1
Lehigh Portland Cement Co.	2
Leland & Hale Co.	9
Liaison Iron Works.	
Lombard Foundry and Mac. Co.	9
Louisville Fire Brick Co.	
McKenna, David.	
Maconber & Whyte Rope Co.	
McMillan, C. W. & Son.	
McMillan, W. & Son.	
Mannex, T. F.	
Manning, Maxwell & Moore.	
Marquette Cement Mfg. Co.	1
Martin, Henry.	61
Marvin Electric Drill Co.	
Matthews Granite Co.	
Meacham & Wright.	6
Pettyjohn Co., The.	59
Pfeiffer Stone Co.	
Phoenix Cement Co.	1
Pirie, J. K.	
Pitkin Supply Co.	
Pittsburg Crushed Steel Co.	
Plymouth Gypsum Co., The.	80
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Pulsorometer Steam Pump Co.	
Raymond Bros. Co., The.	18
Reading Brick Machy. Co.	65
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Richards, J. H. R.	22
Richardson Scale Co.	
Ricketson Mineral Paint Works.	80
Rizzi Bros.	
Rossing Co.	64
Rochester Lime Co.	17
Rock Island Ry.	58
Rowe, John A.	
Runnyan Concrete Machy. Co.	69
Ruggles-Coles Eng. Co., New York.	22
Ruggles Mac Co.	
Ruxton, George.	
Sackett Plaster Board Co.	79
Sarvis & Co.	
St. Louis Portland Cement Co.	2
St. Louis Steam Engine Co.	
Sickles, Geo. B.	
Scito Lime Co.	
Schneider Granite Co.	
Shaw Electric Crass Co.	
Sheridan Stucco Retarder Co.	75
Shoemaker & Casparis.	7
Shoop, S. W. & Co.	22
Shurtliff Mfg. Co.	80
Smith, F. L.	17
Smith, E. L. & Co.	
South Side Stone Co.	
Spackman, Harry Eng. Co.	9
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Stewart, F. P.	
Stone Working Mac. Co.	
Stroud, E. H. & Co.	41
Stroudsburg Engine Works.	
Sturtevant Mill Co.	18
Sullivan Machy. Co.	
Taylor Iron & Steel Co.	7
Throop A. T.	39
Teasdale, R. J.	
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Tyler Co. W. S.	5
Union Mining Co.	1
U. S. Drying Engineering Co.	75
United Cement Mach. Co.	88
United States Gypsum Co.	71
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Vulcanite Portland Cement Co.	6
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Wheeling Wall Plaster Co.	75
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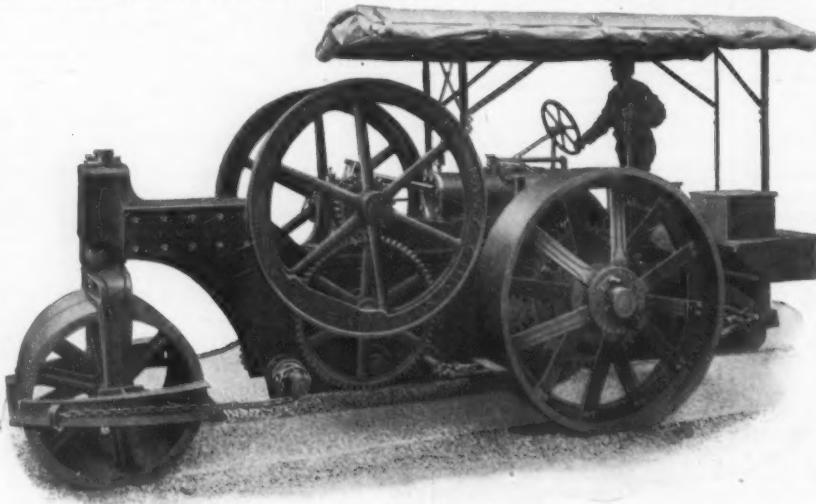
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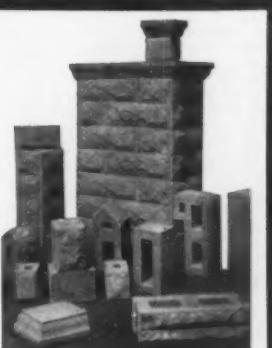
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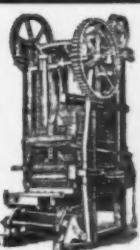
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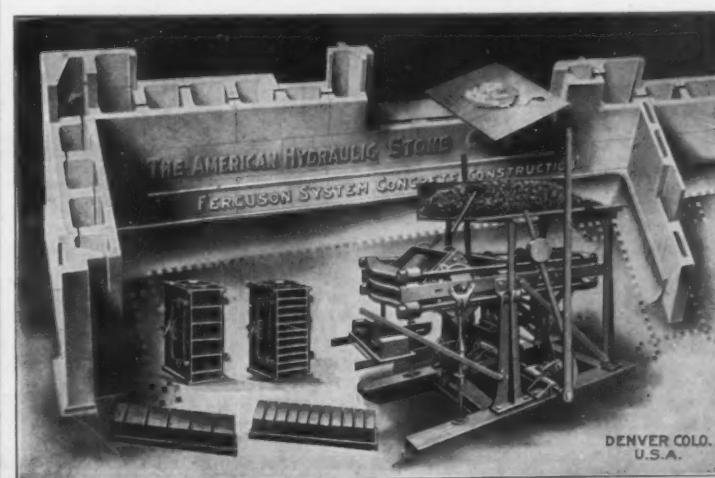
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Mixing is tearing two particles of the same material apart, and placing a particle of a different material between them.

Blades in a mixing drum act as disintegrators. They help tear the particles apart, thereby permitting other particles to fall between them, and thus producing a thorough and uniform mixture.

Disintegration must always precede mixing. It assists mixing.

This is the Way the
Smith Mixer Mixes

Kneading is Not Mixing. Some mixers subject the aggregates to a kneading process, and then claim that they mix.

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Main Office, 520 Old Colony Building, CHICAGO, ILL.

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The Cheapest and Best Waterproofing

Nodam-Pwall—A Fluid Compound has been invented, perfected, tried and found not wanting. When employed to subdue the affinity of seasoned cement brick or block and lime sand brick, to not absorb, but shed RAIN WATER.

Why Not Make a Profit

By Producing a Perfectly
Satisfactory Waterproofing
Compound for your
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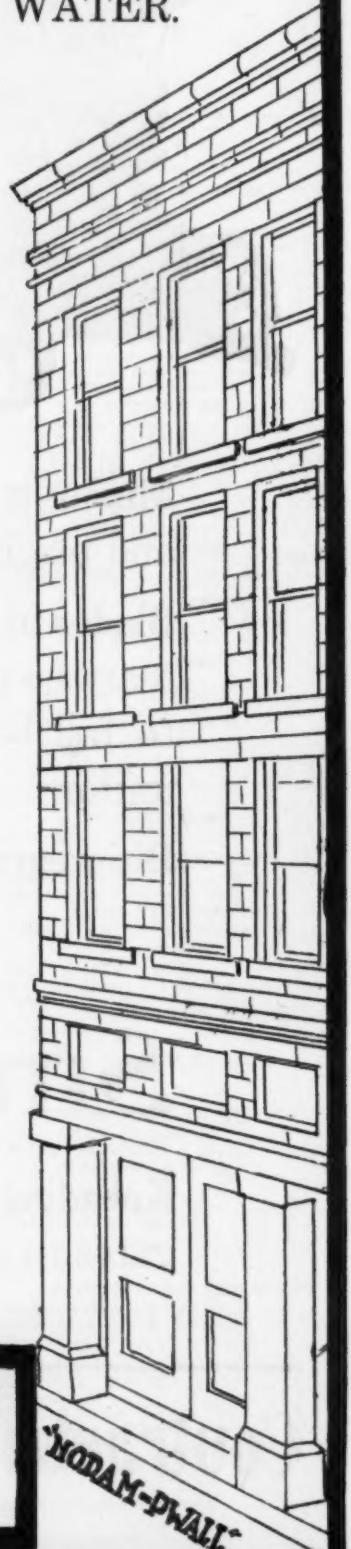
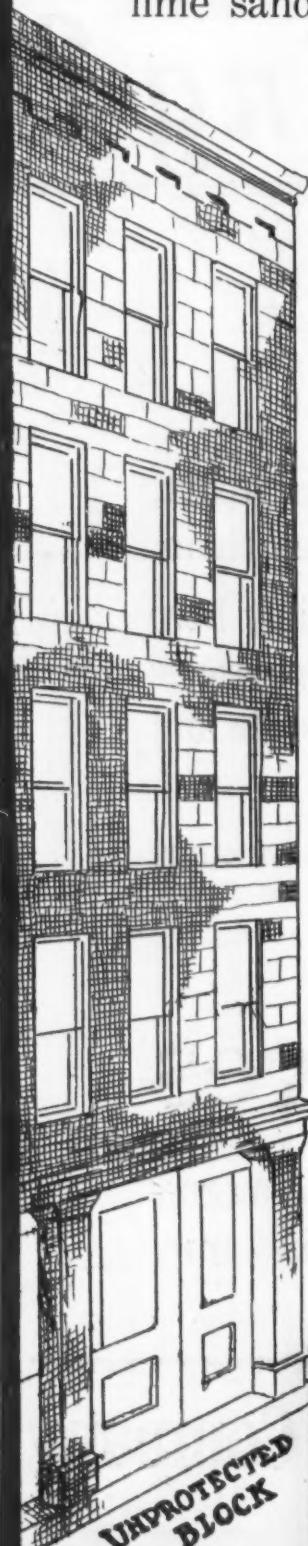


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EVERY cement user, cement block and brick manufacturer and user, sand lime and brick manufacturer and user, and contractor will profit by purchasing this formula. The Price is \$5.00, which must be paid in advance and the signature of the recipient which guarantees the lawful owner of this NODAM-PWALL formula must sign a contract not to reveal the materials used or the mix, which composes the formula, or the instructions as to its particular use.

NODAM-PWALL is a winner. It will make you money. The investment is small and by integrity of purpose and the purchase and use of the same you can add to your success for 1907 by ENDING YOUR ORDER AT ONCE, and don't forget the name NODAM-PWALL.

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THE UNITED CEMENT MACHINERY MFG. CO.

All agreements contingent upon strikes, accidents or other causes beyond our control.
All agreements, contracts and sales must be approved by J.W. SANDERSON, General Manager.

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We have Hollow Block Machines from \$21.00 up, the prices varying according to the outfit and grade. They include the most perfect machines ever produced. Our several types of Concrete Mixers are the best that money will buy.

OUR OFFER:—In order that you may carefully examine our complete lines and choose just what you want, we will gladly pay your railroad expenses and practically operate any or all of the machines in our demonstrating department, then if we cannot satisfy you fully as to their merit and price we will pay your fares just the same.

Or, if you purchase a machine direct we will send a practical demonstrator to start your plant.

Write us to-day for our 80-Page Catalog. Department C.

The United Cement Machinery Manufacturing Co.
Maple and Front Streets COLUMBUS, OHIO



The Sanders Brick Machine

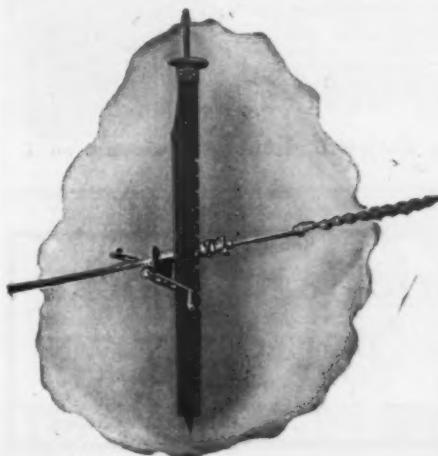
For making sand and cement brick, sand and lime brick, any brick, all shapes and sizes. This machine makes the finest face brick of any machine on the market; every brick is perfect with fine, smooth face and sharp, square edges, every brick a pressed brick. This machine makes plain brick, ornamental brick, molded brick, all shapes and sizes, building blocks, rock face, tool face, panel face, plain face with V joint and brick face, fancy belt courses, corner blocks, combination brick cornices, fine porch columns, porch piers, lattice work, wall trimmings, chimney tops, paving block, archways, wainscoting and tiling for vestibules and hallways, stair steps and risers figured and paneled, for inside and outside stairs, also many figures in terra cotta work can be made on this machine, and made any color by using the chemical coloring.

Two men can make 4,000 to 6,000 brick a day, 1½ bbls. of cement to 1½ yds. of sand will make 1,000 good brick; 2 bbls. of cement to 1½ yds. of good, fine sand will make 1,000 fine face brick, style and variety of work unlimited. It pays every time to buy the best machine. With good sand and good cement you only need one of our machines to make the best and finest cement work that can be made. Send for our catalogue in which you will see cuts made from work on this machine—seeing is believing—it is acknowledged by experts to be the best machine on the market for cement work. Be sure that you are right, then buy our machine which makes everything right.

Catalogue Free.

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HOWELL'S Celebrated Ball Bearing Heavy Geared Post Drills

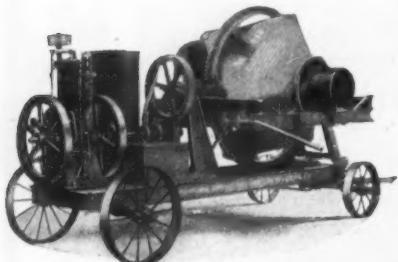
Awarded Gold Medal, St. Louis.

We make 40 different styles machines run by Hand, Compressed Air and Electricity for boring Fire Clay, Coal, Rock, Rock Salt, Gypsum and Plaster Rock. Send to day for our handsomely Illustrated Catalogue.

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(ESTABLISHED 1878.)

The Chicago Improved Cube Concrete Mixer



Used by United States Government Reinforced Concrete Commission, St. Louis, for all cement testing purposes

Only Machine Provided with AUTOMATIC POWER DUMPING DEVICE WHICH SAVES LABOR of one Man.

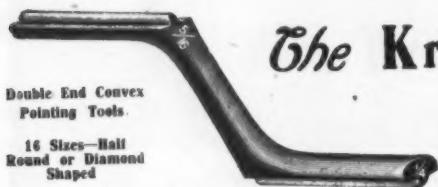
OUR NEW MIXER CHARGING ELEVATOR

not only INCREASES THE CAPACITY of the mixer from 25 to 50 per cent., but ABSOLUTELY ELIMINATES all necessity for the building of any kind of platform or runway, THEREBY SAVING 75 per cent. of time lost in moving from one point to another on the work. Sizes and mountings for every requirement. Write for catalogue No. 16.

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Double End Convex Pointing Tools.

16 Sizes—Half Round or Diamond Shaped

Double End Concave Beading Tools
16 Sizes—Half Round or V Shape

The Kramer Bros. Foundry Co.

DAYTON, OHIO

Largest Manufacturers of Cement Tools in the United States.

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Simplicity } in THE X-L CONCRETE STONE MACHINE is { Efficient
Practicability } A Tested Success from Results of Years of Experience. Economical

Guaranteed to Equal in Efficiency any Four Other Machines and Save 20 to 25 per cent. in the Construction of "Dry Walls."

A New Feature—Interchangeable Plates. The same plates can be used on all sides, finishing both the face and outside and inside returns, and can be inverted and intermingled, forming hundreds of different designs and combinations. Our blocks make all width walls, and form all parts of a building, the same as a brick.

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Prices.

E. E. EVANS, Mgr. 111-113 W. 18th Street,
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NORMANDIN.

High-Grade Concrete Block, Brick, Post, Sill, Cap and Mixing Machinery

"Just remember 9"—"We have the Leaders"—"9 of them"
1 Normandin Concrete Block Machine (Face Side).
2 Peninsular Concrete Block Machine (Face Down).
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4 Champion Concrete Veneer Machine (Face Down).
5 Favorite Sand Cement Brick Machine with mechanical tamper.
6 Systematic Concrete Mixer.
7 Universal Cement Post Machines.
8 Practical Sill, Cap, Step, Lintel Mold.
9 Superior Ornamental Molds—Baluster, Bassas and Balls.

Hundreds of Block and Brick plants in operation. The Hollow Block and Brick business is permanent and profitable, broadening in extent every day. It's not a question of material, but is a question of machine.

We are in the business, "first in field, established 1900." We can give you the best value for your money. Write us. Don't delay. Get started. Concrete blocks and brick are in demand. We solicit your trade because we can please you. Our machines are standard; adopted twice by the U. S. Government. Highest awards Universal Exposition, St. Louis, 1904, and Portland Exposition, 1905 for superior excellence.

Members of the National Concrete Manufacturers' Association.

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The Only Fire-Proof Sand for Cement Brick and Blocks

THE IDEAL SAND FOR SAND-LIME BRICK

THE BEST SAND
GLASS MANUFACTURING FOUNDRY PURPOSES
GLASS BEVELING STONE CUTTING
PLASTERING AND CONCRETE

PURE WHITE AND RUFF

99% Pure Silica

THE BEST OF KNOWN
CORE SANDS.

KENTUCKY SILICA COMPANY, LOUISVILLE, KY.

MINES ON I. O. R. R. AT
TIP TOP, KENTUCKY.

SAVE 75 PER CENT. OF THE COST

BY USING A PAULY CONCRETE WALL MACHINE.

Enormous Economy Guaranteed on Every Job When Used for the Construction of

Foundations, Basements, Cellars and Retaining Walls

The expense of cribbing or centering amounts to a distinct operation that must be performed by skilled mechanics using costly lumber, with heavy waste in both time and materials. After all this comes the actual concrete work, representing really a small part of the outlay and cost. Yet this is the basis for collecting and your customer's only reason for doing business with you.

We build the only machine that completely dispenses with all of the cribbing or centering in very many concrete jobs. Fully half the work of any contractor, who takes a general line of the ordinary run of concrete work, can be reduced in cost to him at least 75 per cent. by using the Pauly Wall Machine. This means a larger profit and a lower price to your customer at the same time.

The cost of the lumber for centering, the expense of handling the lumber, the delay and cost of carpenter work can be eliminated.

Substantial Contractors are Invited to Investigate. DO IT NOW!

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YOUNGSTOWN, OHIO.



Cement Building Block the Coming Material.

We are Agents for Machines that Make the Blocks.

We are operating one of the largest block plants in the South, and are in position to demonstrate its success—also manufacturers of crushed stone for concrete purposes.

The Amount of Investment

Necessary to Make Blocks is Small. . . . Why Not Be the One in Your Town to Take Hold of It?

If you will buy the Machine, it will prove a paying investment.

Write us for particulars, also catalogue.

We cheerfully answer all questions.

Newsom Crushed Stone and Quarry Company,

First National Bank Building, :: NASHVILLE, TENNESSEE

THE PERFECTION POWER BLOCK MACHINE For Making Hollow Concrete Blocks.

The Only Machine Making Hollow Blocks Under High Pressure.

100 TON PRESSURE
ON EVERY BLOCK.

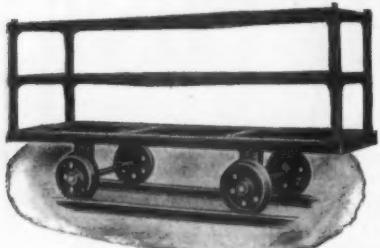
600 TO 1000 BLOCKS
PER DAY.

OUR MACHINE MADE THE SAND-LIME BLOCK ON EXHIBITION
AT THE SAND-LIME BRICK CONVENTION, DETROIT.
WRITE US FOR FULL PARTICULARS.

THE PERFECTION BLOCK MACHINE CO., Kasota Building, Minneapolis, Minn.

Tell 'em you saw it in ROCK PRODUCTS.

Roller Bearing Drying and Transfer Cars for CEMENT BLOCKS and BRICK.



Write us for Catalogue No. 5.

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Do not buy a car where the corner braces extend below the beams of the deck as they spoil the end blocks.

The only car that has the center of the decks supported without the annoyance of center legs.

THE FLOUR CITY "Continuous Air Space" Block Machine

HAS NO COMPETITORS,

An Absolutely Moisture and Fire-Proof Block.
A Wall with Continuous Vertical and Horizontal Air Chamber.
A Block with Rock Face, Panel Face, Brick Face and Broken
Ashler Face

Any Degree Angle Blocks, Arches, Water Tables and Fancy Cornice.
The Only Block Having Two Nailing Points Moulded in Every Stone

Will turn out 150 to 200 Blocks,
in ten hours with two common men.

Write us to-day for Catalog, Special Proposition, Exclusive Rights, Territory, etc., etc.

AGENTS WANTED.

THE FLOUR CITY CEMENT BLOCK & MACHINE CO.
701 Sykes Block, MINNEAPOLIS, MINN.

The Dunn Hollow Block Machine



COMPLETE in every detail. Especially adapted to the use of the Block manufacturer. Making blocks in all widths, lengths and many designs, including Sills, Lintels, Pier Blocks, etc.

These Machines Combine the Side Face and Face Down Systems.

Price \$100

MASON'S AND BUILDERS' BLOCK MACHINE

MAKES blocks from 2 to 12 inches in width, up to 20 inches long in different designs. No expensive iron pallets required. A practical, rapid and economical machine for the Mason and Builder. No machine at any price makes better blocks or makes them more rapidly or economically. PRICE.....

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Sole Manufacturers in the U. S.
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W. E. DUNN & CO.,

IT IS A QUESTION OF ECONOMY

in buying a Concrete Building Block Machine the same as any thing else. You want the best, at the same time the cheapest. The SIMPLICITY fills both of these requirements.

Write for catalogue and further information.



"THE SIMPLICITY."

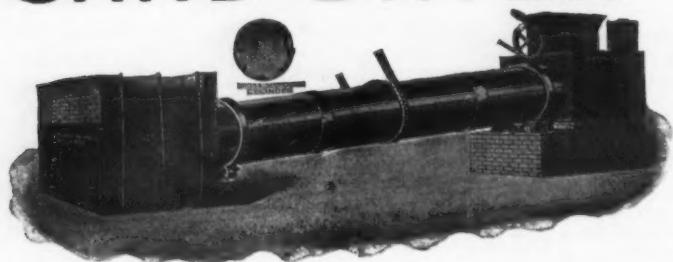
The Standard Sand & Machine Company,

Manufacturers of Labor Saving Machinery.

Address Dept. "D."

CLEVELAND, OHIO.

SAND DRYER



Dryers, Screens, Elevating and Conveying Machinery, Mixers, Concrete Building Block Machinery of all kinds, Power Tampers, Etc.

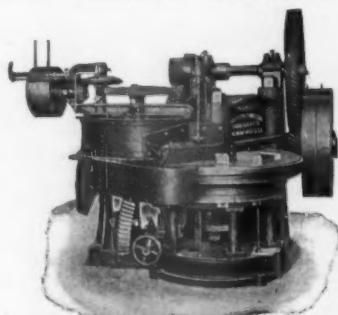
Ask for catalogue and prices.

The Standard Sand and Machine Company,
CLEVELAND, OHIO.

The American Sandstone

Brick Machinery Company,

Dept. R. SAGINAW, MICH.



Improved Kominck rotary Presses are now being built right or left hand, with extra table for making face and fancy brick, on which double pressure is exerted. Our patented rotary brush does the work of one man, and keeps the plunger plates clean.

DON'T confuse our practical system with the so-called Scientific Systems. We have the Practical System, the Practical Machinery, the Practical Press, the Practical Hydration and the Practical Outfit, which is manufactured in our own shops, under the supervision of Practical Men with Practical Experience.

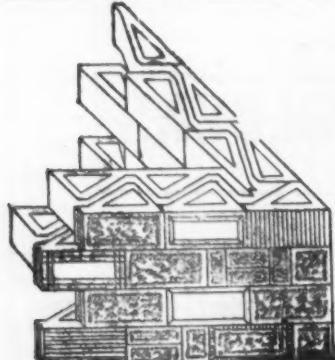
Our Plants are installed under the supervision of practical engineers who know how Sand-Lime Brick should be made, and can be made.

We have practical plants running successfully, to show to prospective investors.

We are Not Scientists.

We produce results, because we are the oldest practical Sand-Lime engineering company doing business in the United States, and we defy contradiction. Incorporated April 1902.

The "Reed" Machines are in the Lead.

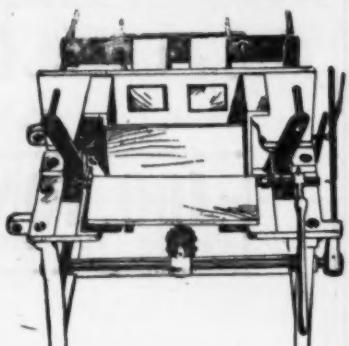


Reliable Agents Wanted. One Agent Earned \$365.00 in Thirty Days.

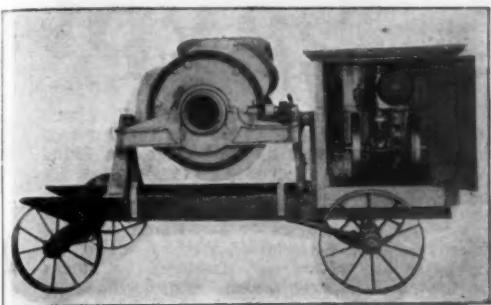
The adjustability of our 1907 machines is a marvel putting them far in the lead of others. Most simple, rapid, up-to-date Machines on the market. Face-down or Face-side Machines producing single, double, hollow or right-angle tri-angle blocks. Best brick machines out. Our system of two-piece wall excels all others on account of the natural bondage and triple air space. When in the market for concrete block or Brick Machine as well as concrete mixer, get our catalogue and prices. Do you desire to make \$\$\$\$\$\$? We can start you right.

The Wichita Coal and Material Co., Wichita, Kan., U. S. A.

Tell 'em you saw it in ROCK PRODUCTS.



The "Clover Leaf" Concrete Mixer

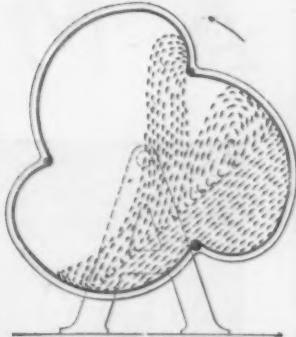


HAS NO INSIDE MECHANISM

The material is doubled over NOT ROLLED.

Note the Points:-

Simple in construction.
Efficient—a mixer that mixes.
Easy to keep clean.
Made in sizes for large and small operators.
We invite inquiries for descriptive catalogue.



Address THE "CLOVER LEAF" COMPANY, South Bend, Ind.



The Standard Continuous Concrete Mixer

"The Mixer that Measures and Mixes."

"You fill the Hoppers, the Mixer does the rest"

CONTINUOUS, AUTOMATIC, FEED EXACT PROPORTIONS.

Materials first Dry Mixed, then "Tempered." Output instantly variable from 0 to Maximum at will of operator, thus insuring Fresh Material for each Block. Feeds Sand and Gravel Dry or net.

Write for description and prices to

The Standard Machine Co.,
KENT, OHIO



The **RUNYAN**

The Latest—The Simplest—The Best

The ONLY successful Mechanical Combination of THREE machines in ONE—Face-Vertical, Face-Down and Brick Machine. All for one price.

Can be converted from a Face-Vertical into a Face-down in ONE minute. It can be changed reversely in the SAME time.



No Advertising Deception But a Genuine Reality



Can be transformed into a BRICK machine in FIFTEEN minutes.

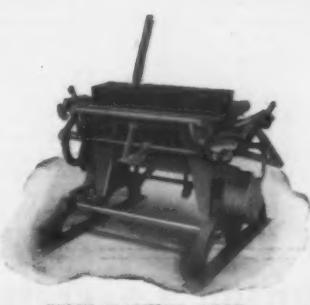
Only one width Straight Pallet necessary on which to make all widths of Blocks, thus saving at least TWO-THIRDS of the money spent for Pallets that other machines will require to accomplish the SAME WORK.

We are the original inventors of the Lever-Counterweight Combination with all principles involved; our patents are basic; beware of other machines using our mechanism.

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The Runyan Concrete Machinery Co.
75-77 Canal Street, CLEVELAND, OHIO.

GOOD AGENTS WANTED.



Sell 'em you now it's ROCK PRODUCTS.

A Message from Egypt



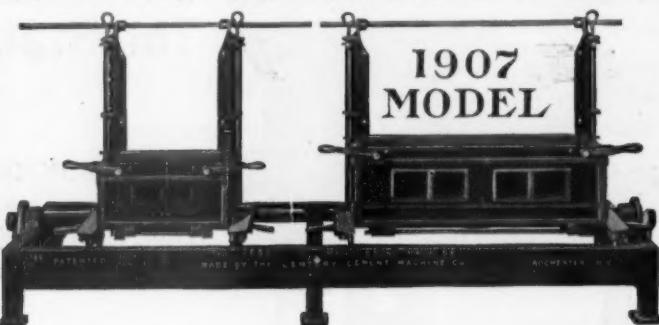
BLOCKS MADE ON HERCULES.

"Ship me six Hercules Machines to Cairo, soon as possible." That's the kind of a letter we got in February, and those are the kind of letters we like to get—but the pleasure was doubled when we found that the order came from a man who had been using the Hercules for over two years.

We don't believe that there ever was a man who after using the Hercules, discarded it for any other machine. It is without a doubt the simplest, strongest, fastest and most economical machine made.

It makes all sizes from two inches to six feet; it makes two blocks at one time. It makes Sills, Lintels, Water Tables and Steps—you tamp on the face with the Hercules, which gives the stone a handsome, natural appearance.

Our new catalog for 1907, gives a whole lot of expert knowledge about Concrete Block making—it is beautifully illustrated, and we will be pleased to send a copy to you free upon request. Ask for catalog L.



Century Cement Machine Co.

179 West Main Street,
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The **BEST BLOCK** IS MADE BY THE **BEST MACHINE**



ROCK FACE CORNER BLOCK.

THE WARREN CONCRETE BLOCK MACHINE

Makes a Hollow Concrete Block that has triple dead air spaces, the only corner block made that cannot be pierced at any angle without striking a dead air space. A wall laid with these blocks is absolutely water and frost proof.

The Warren Machine is easily and quickly operated, adjustable for making any size block desired and arranged for special facing. A durable machine, practical for large or small plants.

Write for full particulars regarding the several different styles of blocks made by the Warren, all possessing the principles of the double and triple continuous dead air spaces.

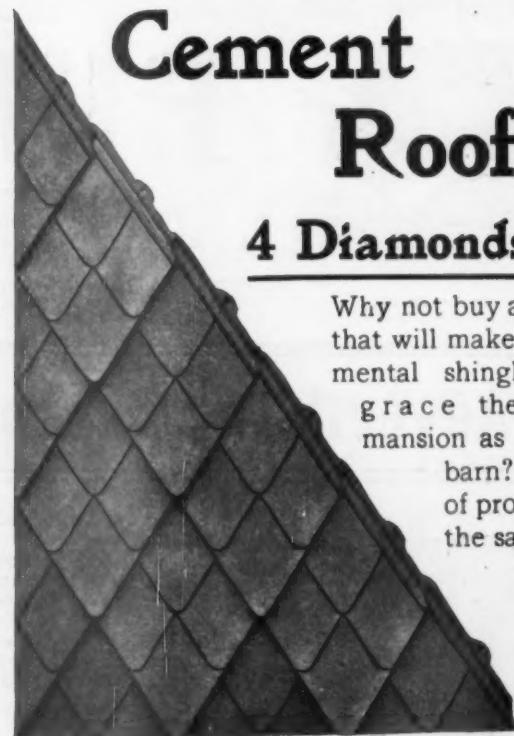
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Johnson Concrete Machine Co.
215 MASSACHUSETTS BLOCK, :: SIOUX CITY, IOWA.

Cement Roofing

4 Diamonds in 1

Why not buy a machine that will make an ornamental shingle fit to grace the swellest mansion as well as a barn? The cost of production is the same.



The Diamond Cement Machine Co., DESHLER, OHIO.

J. P. STOLTZ & COMPANY,
General Eastern Agents, 420 West 23rd Street, NEW YORK.

Tell 'em you saw it in ROCK PRODUCTS.

The Latest Improvement in Building Material.
A Product in Itself, No Imitation.

"ART MARBLE," "LITHOLITE"

—and—

Concrete Building Blocks.

THE THOMAS
Block and System of Insulated Walls
—combining—

Strength, Durability and Beauty.

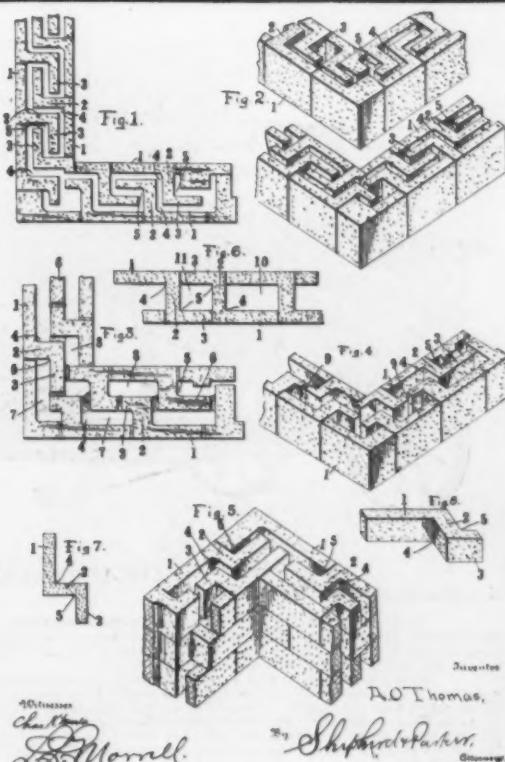
As far superior to common imitation stone as pressed brick is to common, and much cheaper. Our process is based upon scientific principles. Machinery and cost of manufacturing reduced to the minimum.

BLOCKS NON-ABSORPTIVE
WALLS FROST PROOF

AGENTS WANTED

Buy while Introductory Prices
are Offered.

Patents fully Cover System.



*John Thomas,
J. M. Morrell.*

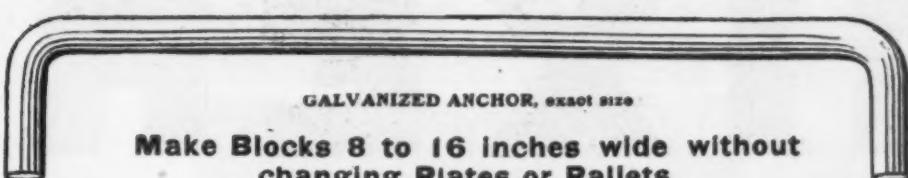
*W. S. Shepard & Parker,
Glenwood.*

KNUTZEN & ISDELL, General Agents, Kearney, Neb.

THE ANCHOR CONCRETE STONE MACHINES make the only continuous Air Space Block—Make the only Frost and Moisture Proof Block—Make all Blocks on the same Wooden Pallet.

Fully
Protected by
Patents

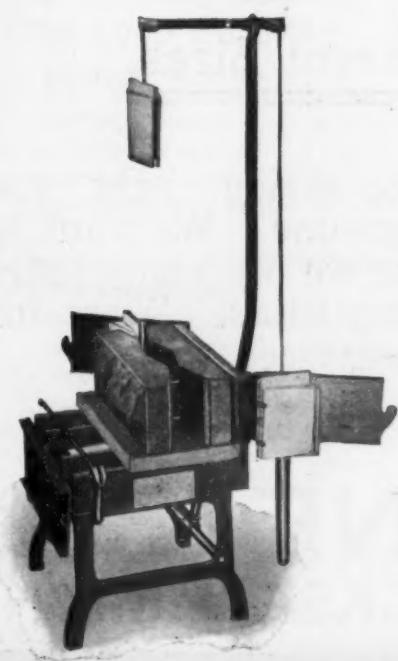
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GALVANIZED ANCHOR, exact size

Make Blocks 8 to 16 inches wide without changing Plates or Pallets

Our Machine led all
others at the Concrete
Conventions.



Write for Catalogue "B" and Prices

ANCHOR CONCRETE STONE CO.

Eastern Agency, 1 Madison Ave.,
New York City, Albert Oliver, Mgr.

Rock Rapids, Iowa.

Tell 'em you saw it in ROCK PRODUCTS.



Ballou Manufacturing Co., Belding, Mich.

GRAND RAPIDS REFRIGERATOR COMPANY.

Gentlemen:—We have been using one of your power mixers for the past month and will say that we are greatly pleased with its operation. We are using at the same time an \$800.00 machine with steam power. The latter is a batch mixer, and we notice every time the men get a little lazy, they don't put in as much gravel as they ought to, which increases the necessary portions of cement. We also notice that in the operation of the batch mixer, four or five laborers are frequently waiting for the batch to be mixed, thus much time is lost; while with your mixer we can load up the wheelbarrows as they come around.

We are also much pleased with the thoroughness with which the cement is mixed with the gravel. It is a perfect mixture and the proportion of cement and gravel can be regulated to a nicety. If purchasers only realized that your machine is more exact in proportion of gravel and cement than batch mixers as they are usually worked, we do not see why you should not sell all the machines that are needed. We also find a great economy in the fuel expense, the coal for the batch mixer costing \$1.00 a day, and the gasoline only fifty cents a day. Another economy is in the cost of the engineer. The batch mixer calls for a man at \$2.50 a day to shovel coal and attend the engine. Your mixer requires no such expense. It also takes fewer men to shovel the gravel into the machine because they can work steadily, while with the batch mixer they have to wait until the batch is mixed and emptied every time. We figure the saving in labor and fuel at \$15 per day over the batch mixer, and they are running side by side, and your machine will make more concrete than the batch mixer.

Very truly yours,

Grand Rapids, Mich., December 19, 1906.

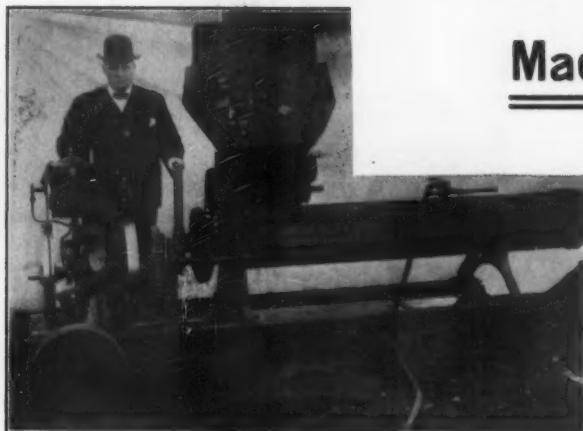
C. H. L.
H. D.

GRAND RAPIDS REFRIGERATOR CO.
(By C. H. Leonard.)

Do You want to save that \$15 a day?
If so, write for booklet to

BALLOU MFG. CO. 35 High Street, Belding, Mich.

MIXERS

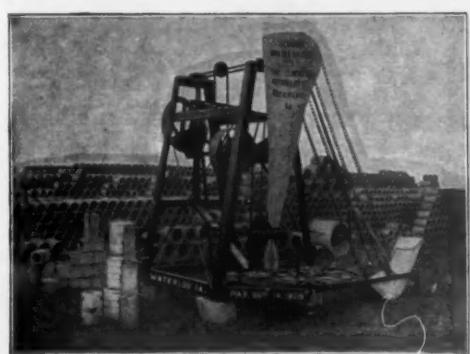


Made in Three Different Sizes.

Simple, labor saving, light and handy to move around. We want to prove to you that we are many years ahead of our competitors. Write for catalog and be convinced.

Write for Catalog 3.

EUREKA MACHINE CO.
420 N. Jackson St. JACKSON, MICH.



What is Your Opinion? ON THE Schenk Drain Tile Machine

A Description of our Exhibit at St. Paul, as Given in the January Issue of "Rock Products."

The Cement Tile Machinery Co., of Waterloo, Iowa, had one of the most interesting displays on the floor. There are many money making possibilities in the cement working industry, but none presents a greater field of endeavor for progressive men than the manufacture of cement tile. Cement drain tile have proven superior to any others. They are porous, strong and durable, and absorb the moisture better than any other material. It is claimed that 8,000 tile can be made in a ten-hour-day on one of these machines. The machine works with clock-like precision and held the interest of the visitors. They can make drain tile on this machine in seven sizes, 4, 5, 6, 7, 8, 10 and 12 inches in diameter—12½ inches in length, making just sixteen to the rod. One of the features of the machine is that one size can be produced just as fast as another. The machine also has molds for making small hollow building blocks. The display was not only one of the most interesting, but one of the most unique in the hall. Mr. Schenk, the inventor of the machine, and W. H. Stewart were on hand in behalf of the Cement Tile Machinery Co.

Grasp the Opportunity and Write

The Cement Tile Machinery Co.

Waterloo, Iowa, U. S. A.

Fisher Hydraulic Stone Machinery

Is the only Machinery
Perfected for making
True Concrete Stone.

HYDRAULIC POWER SYSTEM.

A 200 Ton pounding pressure, uniformly applied.

Condenses the concrete 30%.

Same density from center to surface.

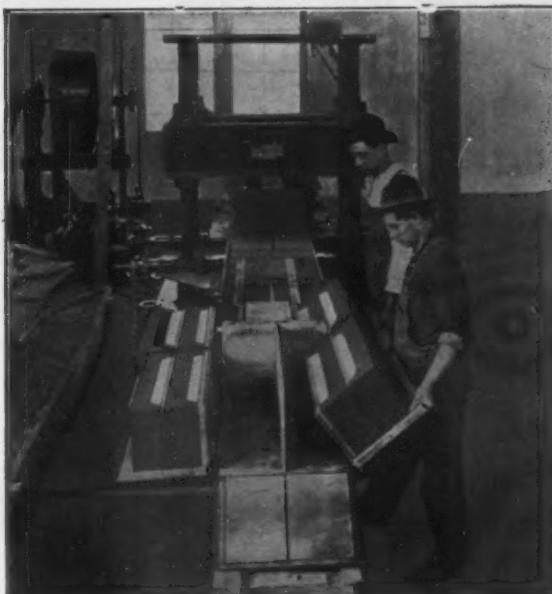
Allows the use of sufficient water to make a plastic mix.

Cement thoroughly crystallized.

These conditions produce true stone of great density and strength.

Stone of all sizes and shapes within dimensions 68x18x9 inches.

ASK FOR CATALOGUE "R"



Turns out from 1500 to 3000 cubic feet of stone per day.

Solves the problem of producing a high grade, reliable building material at moderate cost.

The demand is constantly increasing
Lumber will soon be exhausted.

Cut stone is generally too expensive.

True Concrete Stone will soon be used as extensively for building as it is now used for paving.

By-products of quarries, mines, furnaces, etc., utilized.

INVESTIGATE NOW.
ASK FOR CATALOGUE "R"

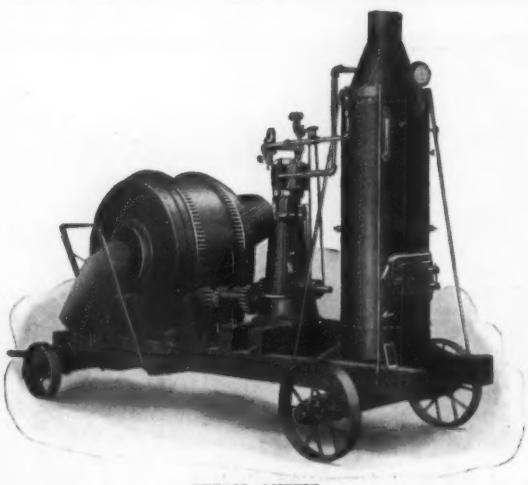
Complete operating exhibit at Convention of National Association of Cement Users, Chicago, January 7 to 12, 1907.

Fisher Hydraulic Stone & Machinery Co.

Builders' Exchange Building,

::

BALTIMORE, MARYLAND



STEAM OUTFIT.

The Chicago Concrete Mixer is lower on the charging side than other Mixers. It is also lighter.

The Mixer does not have to be stopped for either loading or discharging.

We equip our Mixers with Steam or Gasoline Engine and Motor Power—on Trucks or Skids.

Send for our catalogue which explains why it is the best all round Mixer on the market.

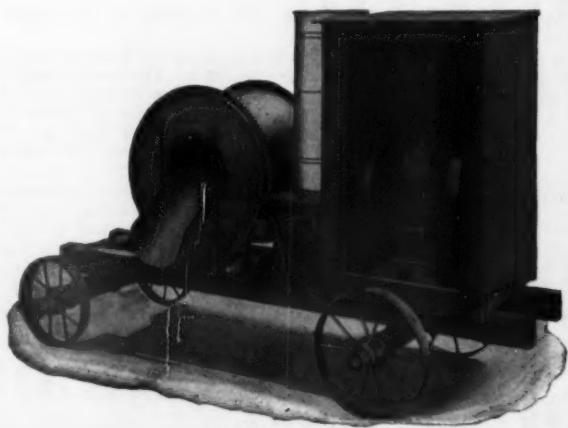
Chicago Concrete Mixer

EFFICIENT—SIMPLE—DURABLE

Why dump the Mixed Concrete on the ground and then shovel into wheelbarrows when you can dump direct into barrows with the Chicago Mixer?

It is the only Batch Mixer that can dump into wheelbarrows successfully, saving time and expense. Your wheelmen take their load themselves. It does not require an extra man to dump the Mixer.

The material is thrown back and forth and rolled over and over 100 times per minute.



GASOLINE OUTFIT.

Chicago Concrete Machinery Co.

22-24 W. Randolph St., CHICAGO, ILL.

Northwestern Agents, Beall & Co., 321 Hawthorne Ave., Portland, Oregon.
SHERMAN, BROWN, CLEMENTS COMPANY, Eastern Agents,
78-80 Murray Street, NEW YORK, N. Y.



Peerless Brick Machine, 1907 Model.

Pat'd No. 811518.

The people who use the "Peerless" know its profit making qualities.

We will send you a list of the concerns who have already made money by doing business with us, if you wish.

Make Money

As others have already done it, by making Cement Brick upon a Peerless Brick Machine.

The Price is Right. The Brick are Right.

More Peerless Machines now in use producing a profit to the owners than all others combined.

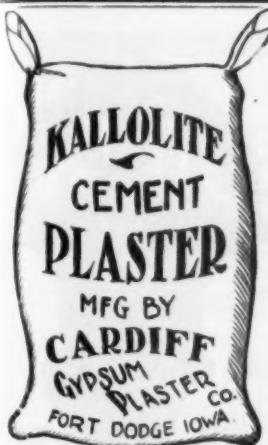
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Peerless Brick Machine Co.

100 Lumber Exchange,

MINNEAPOLIS, MINN.

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KALLOLITE CEMENT PLASTER.

IS MANUFACTURED FROM THE PUREST GYPSUM ROCK FOUND IN THE UNITED STATES AS SHOWN BY GOVERNMENT REPORT.

CARDIFF GYPSUM PLASTER CO.
MANUFACTURERS FORT DODGE, IOWA

Plaster! Plaster!

IOWA HARD PLASTER CO.



HARD BY NAME
HARD BY NATURE
HARD TO BEAT
NOT HARD TO GET



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WHEELING WALL PLASTER CO.,

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Wheeling Plaster and Builders Supplies.

WHEELING, - - WEST VIRGINIA.



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Elastic in its nature, can be applied with 25 per cent. less labor and has 12½ per cent. more covering capacity than any other similar material.

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SPECIAL MACHINERY AND FORMULAS

FOR THE MANUFACTURE OF

WOOD FIBER PLASTER, FIRE PROOF-
ING AND KINDRED PRODUCTS.

The Ohio Fiber Machinery Co.

Furnish the latest improved FIBER MACHINE, (fully patented), also FORMULAS, on a reasonable proposition. The strongest companies and oldest manufacturers are operating under my contracts.

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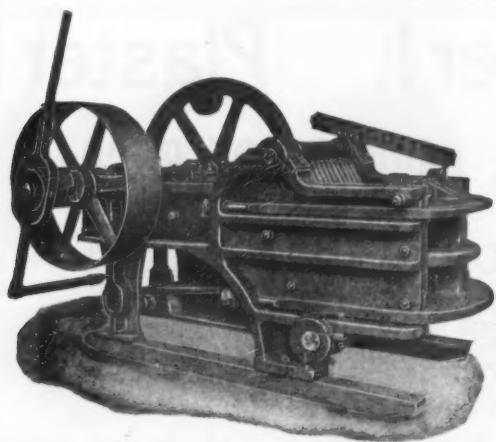
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GENERAL MANAGER.

Elyria, Ohio.

Empire Gypsum Co.

The Empire Gypsum Company's new mill, with capacity of 200 tons daily, is in operation and they are prepared to promptly furnish the best quality of Empire Stucco, Empire Neat Plaster, Sterling Wood Fiber Wall Plaster and Excelsior Wall Plaster Sanded.

Garbutt, Monroe County, New York.



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for soft rocks, burnt lime, etc.
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We design modern Plaster Mills and make all necessary Machinery, including Kettles, Nippers, Crackers, Buhrs, Screens, Elevators, Shafting etc.

SPECIAL CRUSHER-GRINDERS FOR LIME HYDRATORS.

BUTTERWORTH & LOWE

17 Huron Street, GRAND RAPIDS, MICH.

Gypsum Machinery

A fine and complete line of Modern Machinery.

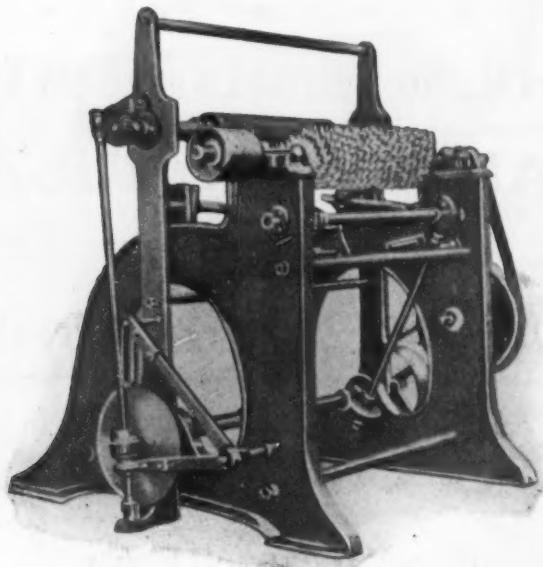
KETTLES, CRUSHERS, NIPPERS, ETC.

We are now building the new Plymouth Mill at Fort Dodge, Iowa, the finest mill in the United States.

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Des Moines Manufacturing and Supply Company DES MOINES, IOWA.

"The Cochran" Automatic Wood Fibre Machine
(PATENTS PENDING)



There is positively nothing cheap or shoddy about this machine, either in workmanship or material.

There are no Sprocket Wheels or Chains, no Cone Pulleys or Cog Wheels to break, get out of order and cause trouble. All the power is transmitted with bevel gears adjusted to "run like a watch."

We call special attention to the "speed increasing mechanism" and automatic action of our machine. When the log is reduced to the size of 2 inches the carriage is automatically released, and swings back to place without being touched by the operator, while at the same time the log stops revolving, without interfering with the other parts of the machine.

The log when finished is revolving six times as fast as at the start and all done automatically and continuously.

Write for catalogue and prices to

Concrete Engineering and Equipment Co.

Butler, Pa.

Greensboro, N. C.

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A Plaster Finish Without Lime
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As Different from Lime as
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A Plaster
Product as Big
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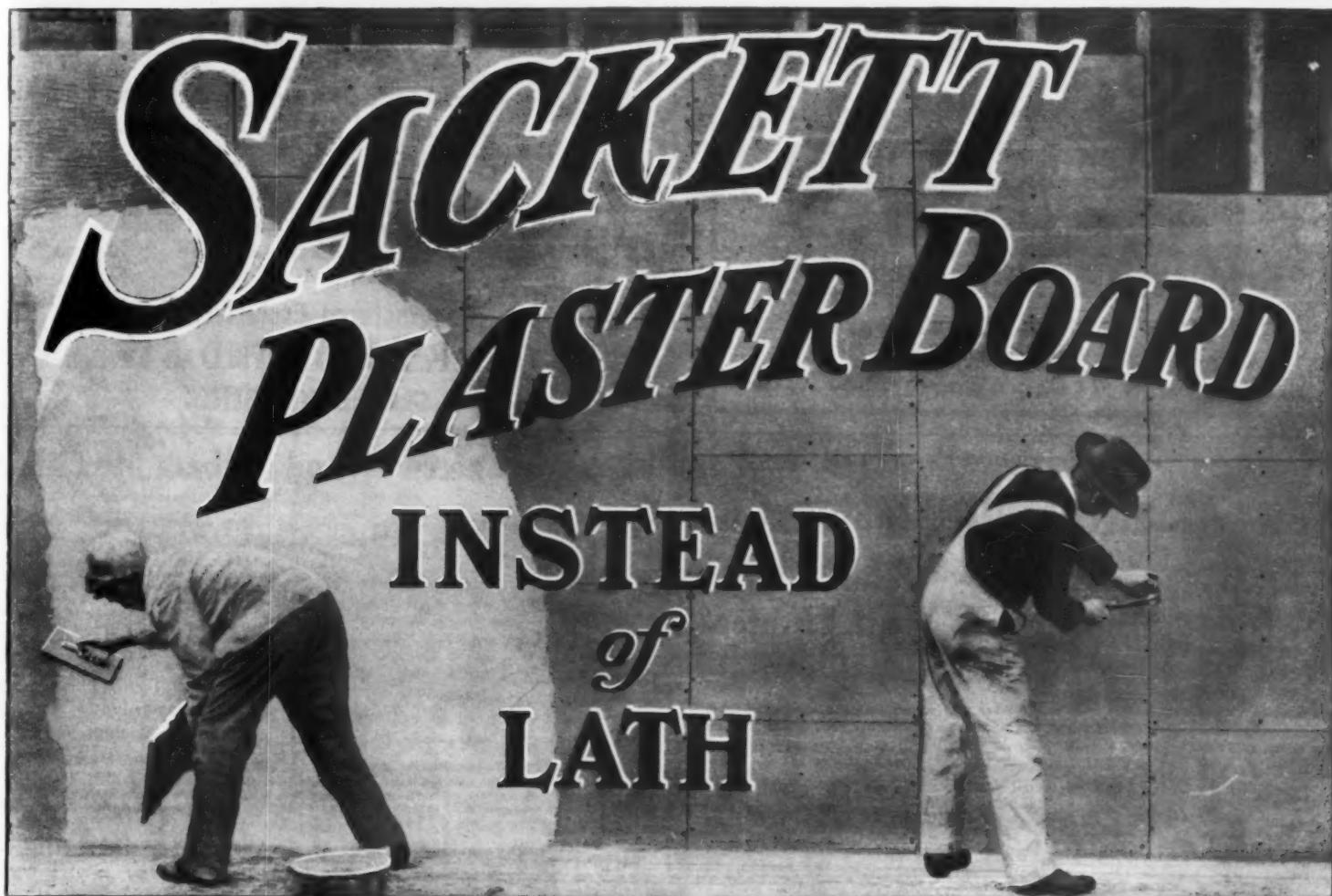
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Invite the careful attention and inspection of

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to some new machines especially designed to meet the requirements of the present progressive period. They demonstrate economies and advantages that have long been needed.

Pictures and Details Right Here
Next Month---Look for It

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SACKETT PLASTER BOARDS have been successfully used since 1891 in thousands of buildings of all classes, including small cottages, prominent hotels, costly residences, churches and theatres.

Walls and ceilings of Sackett Plaster Boards will be **DRY AND READY IN HALF THE TIME** required when lath is used, as less than half the quantity of water is needed.

Less moisture means less damage from warped and twisted trim and woodwork.

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Sackett Plaster Board is an efficient and economical **FIREPROOFING**, not only for walls but between floors, and for protecting exposed wooden surfaces in mills, warehouses and industrial structures. It is also used extensively instead of lumber as outside sheathing under weather boards.

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For all kinds of Buildings its use is ideal. It speeds construction; it lessens building cost; it reduces fixed charges for insurance; it makes fire resisting walls and ceilings, and gives absolute satisfaction.

Carried in stock by up-to-date building material dealers everywhere.

BOOKLET showing buildings all over the country where these boards have been successfully used with SAMPLES and name of nearest dealer, furnished on application to any of the following General Distributors.

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ST. LOUIS EXPOSITION
1904.

For Brick, Mortar, Cement, Stone, etc.

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BUFF, PURPLE,
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If you have not tried it, we are sure it would be to your interest to do so.

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NEW ALBANY, IND.

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**Cement Plaster
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The Brand that's Made from Pure Gypsum Rock.

Correspondence Solicited.

MANUFACTURED BY

**The Plymouth Gypsum Co.
FORT DODGE, IOWA**

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**THE Oldest, Why
Strongest, Why
Best, Why ?**

BECAUSE IT IS MADE BY

**Chemical Stucco Retarder Co.
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Our new Air Separation plant gives us the most uniform Retarder made. Write for sample, and let us prove it.

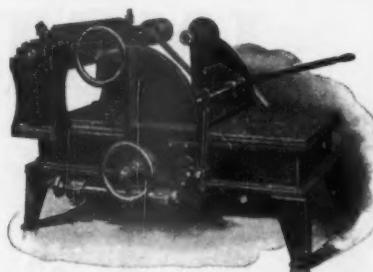
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WILL NOT RUST**

If properly cared for. Roofs put on forty and fifty years ago are now good.

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**THE GARRY IRON AND STEEL CO.
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Gentlemen:—We are very much pleased with your machine, as is evidenced by the fact that we are ordering the second one from you. This last machine will take the place of a machine, which we have found takes more power to run, with about one-third the output of your machine.

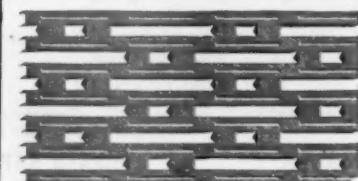
Yours truly,

S. A. WALKER, Vice Pres.

Acme Cement Plaster Co., St. Louis, Mo.



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SOLID PARTITIONS
ERECTED WITHOUT
STEEL STIFFENING RODS
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Prepared in any Color for Laying Pressed and Enamelled Brick, Stone Fronts, Terra Cotta, Chimneys, Fire Places, Etc.

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CRUSHED, GROUND AND BOLTED SOAPSTONE.

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Then buy your Stucco
AND
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The
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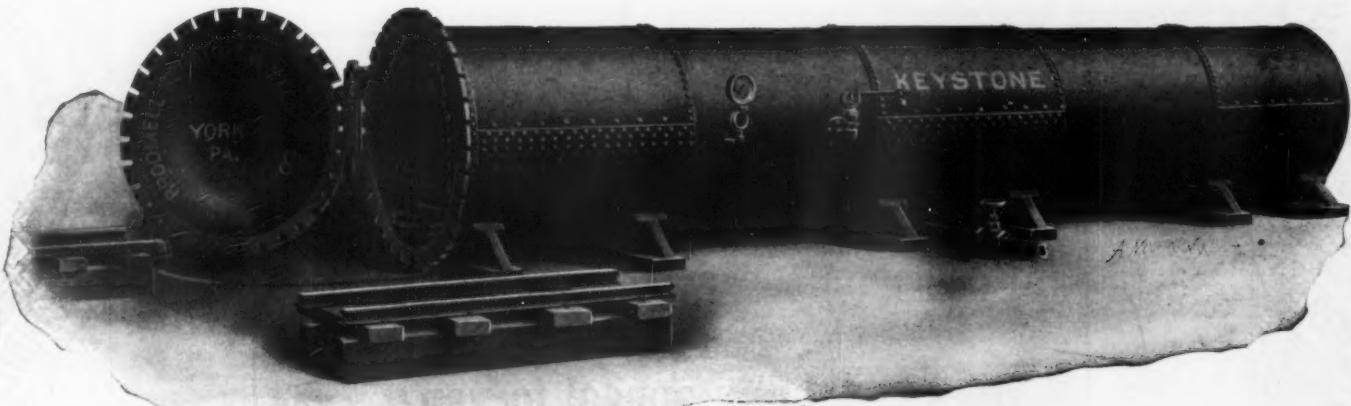
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"ANCHOR" WOOD FIBRE PLASTER.
SUPERFINE CALCINED PLASTER.**

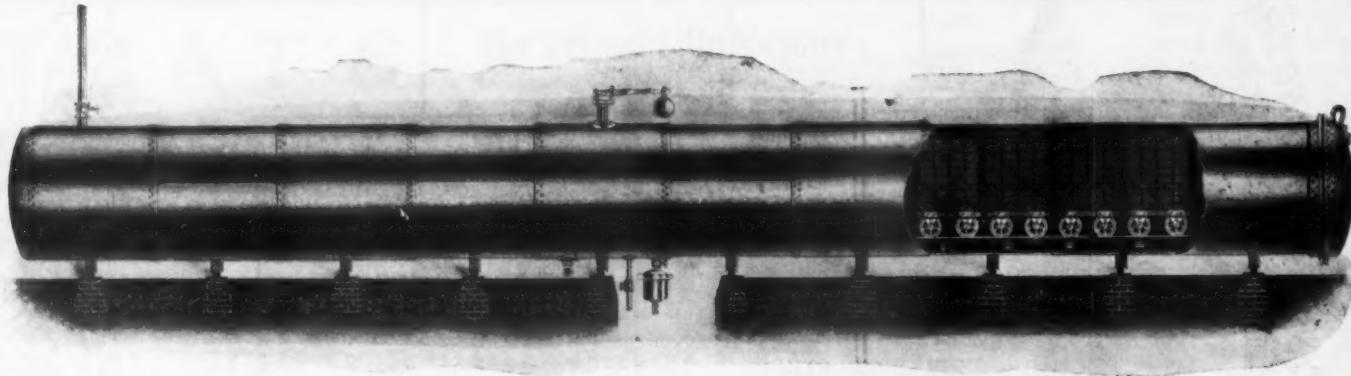
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Our Sand-Lime Brick Machinery is at least a little better than any other. We have testimonials to show it. We build it all in our own factory and are sure of its quality. We are the only firm doing this. We will design and equip your entire plant or will sell you parts of your equipment. Our catalog describing and illustrating our full line will be sent upon request.

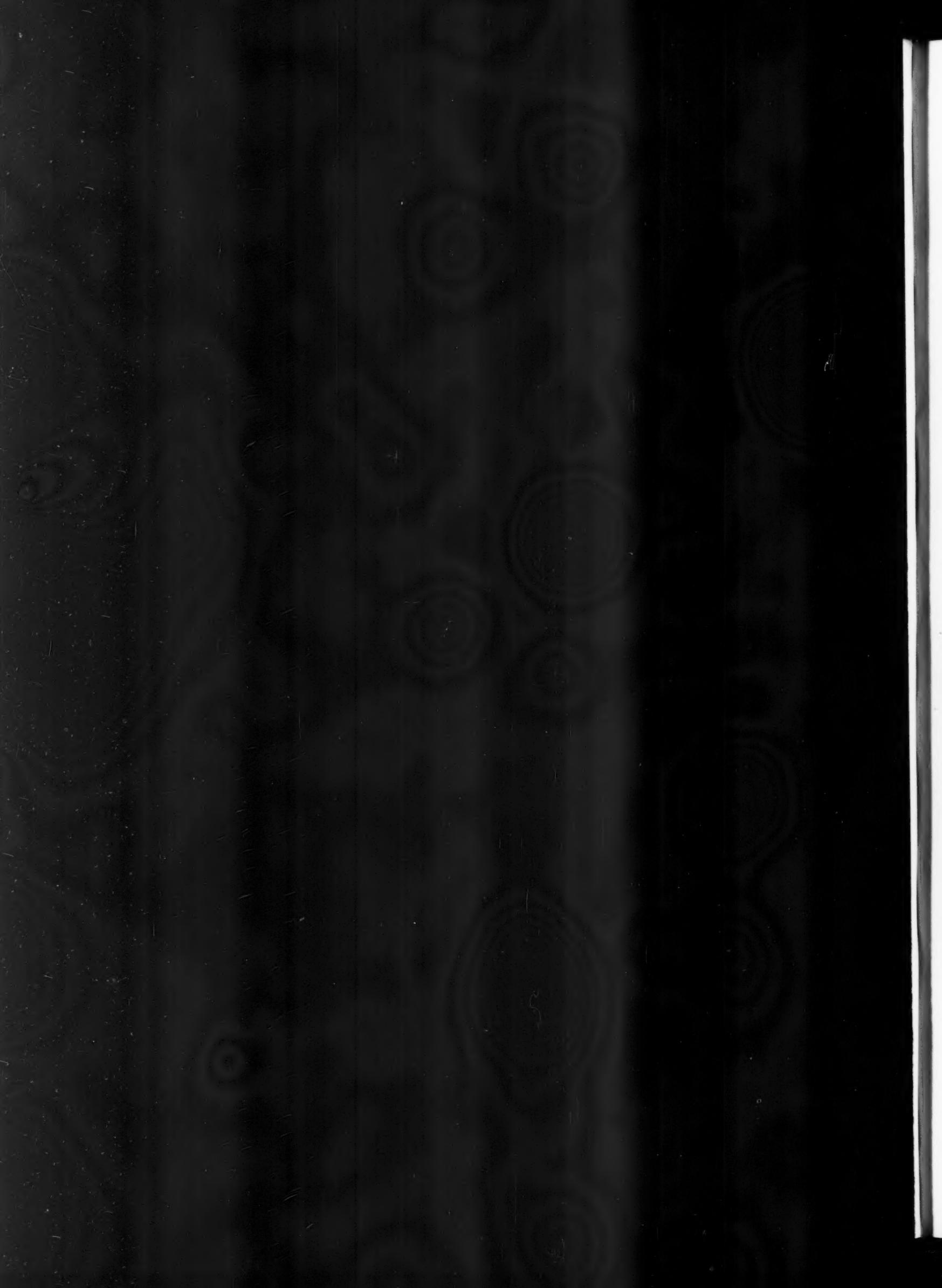
We also build a full line of machinery and appliances for making Clay Products, Cement and Pottery, Dryers and Dryer Apparatus.

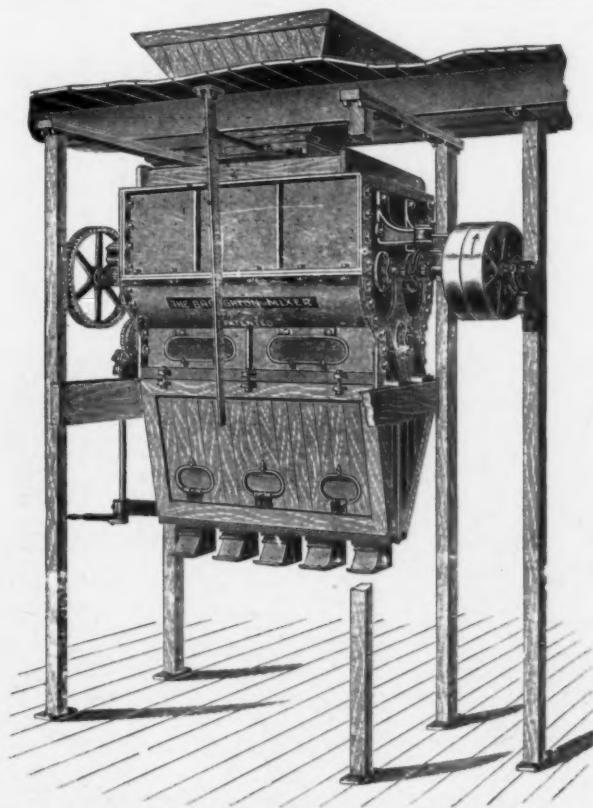
Everything we sell we make. We therefore know its quality to be right.

**The American Clay Machinery Co.,
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Tell 'em you saw it in ROCK PRODUCTS.





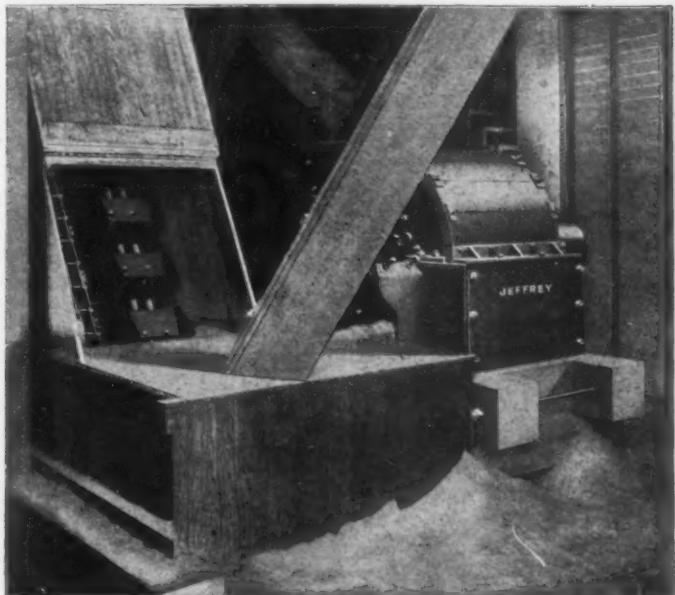


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Mixers of Plaster, Cement and
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Crushing and Elevating Limestone



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We have had more experience in equipping, starting and operating SAND-LIME BRICK PLANTS than any other concern in this country, and we make STRONGER GUARANTEES.

ALL MONEY REFUNDED if brick made in regular work are not equal to samples submitted. No risks and no expensive experimenting under our method of installing plants. It is the **only safe method** for beginners in any new industry. Our latest illustrated Booklet gives full particulars. Sent free.

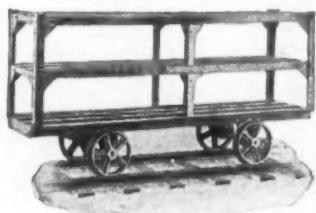
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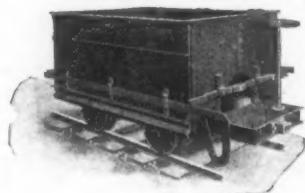
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at long periods shows results equal to the average of Portlands.

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